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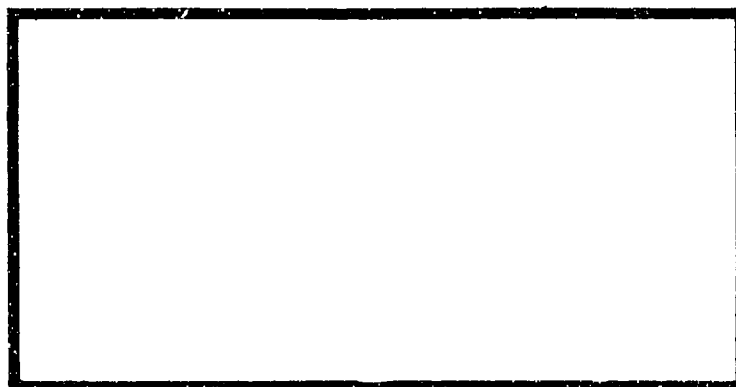
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A STUDY OF PILOTS' VALUE SYSTEMS
AND THEIR EFFECT ON
CAREER INTENTIONS

Frank R. Dethloff, Captain, USAF
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Because an individual's values are important determinants of behavior, this research first described the personal value systems of Air Force pilots with less than eight years of commissioned service. Having established that a common value system existed among all pilots and that pilots also have a common perceived organizational value system, the researchers investigated personal and perceived organizational value systems in relation to career intentions. The pilots' personal value systems were found to conflict with their perceived organizational value systems. This conflict existed among all pilots, but the conflict was greatest among the pilots who were planning to separate from active duty. The individual value conflicts suggest possible personnel policy changes to enhance Air Force pilot retention.

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A STUDY OF PILOTS' VALUE SYSTEMS AND
THEIR EFFECT ON CAREER INTENTIONS

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics Management

By

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/// Sept ~~1978~~ 1978

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School of Systems and Logistics in partial fulfillment of the require-
ments for the degree of

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT
(Captain Frank R. Dethloff)

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT
(ACQUISITION LOGISTICS MAJOR)
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DATE: 8 September 1978


COMMITTEE CHAIRMAN

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CHAPTER I

INTRODUCTION

It is a fundamental objective of the USAF to maintain a core of qualified pilots. The availability of these qualified pilots is essential to national defense (28:2-3). Further, the high costs of flying training have caused HQ USAF, the Department of Defense, and Congress to scrutinize the pilot requirement and take an increasing interest in this high value resource (25:4-1).

A recent study conducted by the Military Personnel Center, has shown that the Air Force is experiencing a problem in retaining its pilots. The retention problem is particularly acute beginning at the time a pilot finishes his flight training commitment.(17:8). The Air Force is presently considering ways to deal with its pilot retention problem (3:1).

Conflicts between individual and organizational values could have an influence on the low pilot retention rate in the Air Force. Individual values are viewed as providing standards for beliefs, behavior, personal judgments, and interpersonal relationships (20:14). As standards, values will influence individual positions on social issues. Values also have the power to direct political and religious

ideology. Values are used to evaluate and judge others. When an individual compares two alternative choices of action, values provide the criteria for the choice. Moral and competency standards also have their basis in individual values. Further, values form the basis for individual rationalization. An individual can explain socially unacceptable behavior to himself by falling back on his individual value system (20:14).

In his work analyzing the American military establishment, Janowitz related career commitment to the degree of individual attachment to military values (8:266). Further, studies have suggested that any differences which may exist between an individual's values and an individual's perception of the organizational values can lead to alienation. This degree of alienation can be correlated to career commitment (20:324). Therefore, the existence of a personal and organizational value conflict may relate to the low pilot retention rate in the Air Force.

STATEMENT OF THE PROBLEM

The Air Force is experiencing a low pilot retention rate.¹ Research has indicated that when an individual's values conflict greatly with those of an organization with which he is associated, the individual

¹Retention rate, for the purpose of this thesis, is defined as the percentage of pilots who remain on active duty until retirement.

often leaves the organization. The possibility of such a personal and organizational value conflict in the Air Force needs to be investigated.

BACKGROUND

Concept of Values

Values provide individuals a guide for action in their daily lives (15:382). The term "values" may refer to interests, pleasures, likes, preferences, duties, moral obligations, desires, needs, aversions and attractions, and many other modalities of selective orientation (14:7). Values have also been defined as " . . . conceptions of the desirable self-sufficient ends which can be ordered and which serve as orientations to action [1:882]." These definitions indicate that values provide the rationalization and impetus for individual behavior.

In ordinary speech the term value is used interchangeably in two senses that must be kept separate here. In one meaning, we refer to the specific evaluation of any object, as in "industrialized nations place a high value on formal education" or "governmental regulation of big business is valueless." Here we are not told what standards are used to make the judgments, but how an object is rated or otherwise appraised. Another meaning of value refers to the criteria, or standards, in terms of which evaluations are made. Value-as-criterion is usually the most important usage for purposes of social scientific analysis (29:401)

Rokeach uses the value-as-criterion to define value as

" . . . an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end existence [20:5]." In this definition, values regulate

. . . impulse satisfaction in accord with the whole array of hierarchical enduring goals of the personality, the requirements of both personality and sociocultural system for order, the need for respecting the interests of others and of the group as a whole in social living [9:399].

England stated that a personal value system is relatively permanent and provides a framework which guides and shapes individual human behavior. England likened values to an ideology or philosophy; therefore, values, once ingrained, provide a stable platform from which to evaluate an individual's behavior (4:2).

Value Formation

Massey indicated that the basic values are formed during the first 21 years of life. Of these 21 years, the first seven are termed "the most crucial stage." Therefore individual values are highly correlated with the parents' values (12). Thornburg agreed that the primary source of individual values comes from the family life. Further, he stated that values and behavior are quite consistent during the childhood stage because of the strong parental and family influence (24:515). Consequently, what a child observes and experiences forms

the background for value judgments. A child will initially behave like the people around him (24:513). Rokeach suggested that values take on a semi-permanent quality because of the method in which values are taught. Parents teach their children what is desirable in absolutes. Honesty, salvation, peace, and logic are stressed as always desirable in an all or nothing manner (20:6).

Massey pointed out the crucial effect that television is having on value formation during the modeling, or preadolescence, period from ages 8-13 (12). If television is watched extensively by young children, the values seen on television are incorporated into the child's basic value system. The consequences of initial value programming become more serious when it is realized that values are semi-permanent (12). Problems of inconsistent behavior are prevalent at the end of preadolescence. The family has presented one value set, but television sometimes provided a different value set (24:516). These conflicting value systems influence an individual and are molded into an individual's value system during the socialization, or adolescence period from ages 14-20. Peer pressure is extremely important during these years (12). Thornburg emphasized that peer pressure has a dominant effect on value formation and behavior during the adolescence period. Behavior and values can be inconsistent during this period because the individual is striving to determine the set of values he wants to determine for himself (24:516-7).

Massey stated that at approximately 21 years of age the individual value systems have become set. Changes can occur, but a "significant emotional event" would be necessary to initiate a value change. A significant emotional event would be something which impacts against the set value system and causes reevaluation of an individual's values (12). The assassination of President Kennedy or the death of a child would be examples of significant emotional events. Rokeach indicated that change in an individual's value system can be caused by self-dissatisfaction which " . . . initiates a process of cognitive and behavioral change [20:325]." Thornburg stated that an adult has a realized value formation, which is somewhat stabilized. That is, an adult's behavior becomes quite consistent with his individual values. Thornburg also stated that value change is an ongoing process (24:519). Research has shown that values do change over time; however, value changes are slow and usually slight (19:335-346).

Research has indicated that values are reinforced by the social system. Three levels of socialization have been identified. The most general level is cultural definitions of what is the most desirable state. Ethnic values are still being taught as desirable end-states (1:886). A second level concerns the location within society. Values are being taught throughout a specific social setting. Values taught in one area, the Northwest for example, would be different than the values learned through socialization in the South (12).

A third area of social value formation evolves from the specific location and situation. Growing up in a military family atmosphere would encourage a different value set than that acquired through growing up in a ghetto setting (1:884-885).

Individual values are thus formed from a combination of personal experience, the process of maturation, and social pressures. Each individual takes these learned values and forms a hierarchically organized value system. Within a value system each value is ordered in importance with respect to other values (20:6). Rokeach defined a value system as ". . . an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance [20:5]."

Values vs Needs

Individual values can be viewed as the core of an individual's belief and action system. Values are significant in understanding what motivates an individual and determines an individual's behavior (1:883). Rokeach argued that individual values are a combination of individual, social, and institutional needs (20:20). Since individual values incorporate individual needs, Maslow's need-hierarchy comes into play. Maslow stated that there are five basic needs: physiological, safety, love, esteem, and self-actualization. These five needs were formed in a hierarchy. Physiological needs had to be fulfilled before safety

needs could be addressed. Each higher order need could be addressed only after the previous need was fulfilled. Maslow taught that if a person was threatened by the loss of a lower level need, the individual's attention would be directed to fulfilling the lower level need first. After fulfilling the lower level need, the individual could then again direct his attention to the next higher level need (10:370-396). Maslow also asserted that man strives for eventual self-actualization. Human nature is constructed so that people strive for goals which people would call good values: toward serenity, courage, honesty, love, unselfishness, and goodness (11:125-6).

Knowledge of value systems complements Maslow's hierarchy of needs. The value system is an organization of learned principles and rules which direct a person's behavior. The individual's value system helps him to choose between alternatives, resolve conflicts, and make decisions. It must be realized that seldom will the individual's total value system impact upon a single activity (20:14). If a person were trying to fulfill a safety need as defined by Maslow, then the applicable parts of the individual value system pertaining to safety would take precedence over the remaining individual values. Rokeach compared the individual's value system to a map or blueprint:

Only that part of the map or blueprint that is immediately relevant is consulted, and the rest is ignored for the moment. Different subsets of the map or blueprint are activated in different social settings [20:14].

Individual values have been shown to form early in life and have been related to behavior as an individual matures. Values also can be related to Maslow's hierarchy of needs. The question thus arises as to how values affect the everyday adult life.

How Values Influence Behavior

The common denominator of nearly all personnel problems is to be found in the area of values. While it is commonly recognized that values differ widely from culture to culture and from person to person, their influence on people's behavior tends to be underestimated (13:131). The influence of values on the individual is powerful because:

1. They principally determine what he regards as right, good, worthy, beautiful, ethical, and so forth (thus establishing his vocation and life goals and many of his motivations, for it may be assumed that he will seek that which he deems desirable).
2. They also provide the standards and norms by which he guides his day-to-day behavior. (In this sense they constitute an integral part of his conscience.)
3. They chiefly determine his attitudes toward the causes and issues (political, economic, social, and industrial) with which he comes into contact daily.
4. They exert a powerful influence on the kinds and types of persons with whom he can be personally compatible and the kinds of social activities in which he can engage.
5. They largely determine which ideas, principles, and concepts he can accept, assimilate, remember, and transmit without distortion.
6. They provide him with an almost unlimited number and variety of moral principles which can be employed to rationalize and justify any action he has taken or is contemplating. (If his stand is totally unrealistic, ludicrous, or even harmful, he can still defend it "on principle.") [13:131].

England conducted an intensive study into the values of managers. The value system England formulated contained the following assertions and implications:

1. Personal value systems influence the way a manager looks at other individuals and groups of individuals, thus influencing interpersonal relationships.
2. Personal value systems influence a manager's perception of situations and problems he faces.
3. Personal value systems influence a manager's decisions and solutions to problems.
4. Personal value systems set the limits for the determination of what is and what is not ethical behavior by a manager.
5. Personal value systems influence the extent to which a manager will accept or will resist organizational pressures and goals.
6. Personal value systems influence not only the perception of individual and organizational success, but its achievement as well.
7. Personal value systems provide a meaningful level of analysis for comparative studies among organizational groupings of individuals [4:2].

Personal value systems as defined by England can be applied to all individuals (4:2-7). The important implications of these assertions is that an individual views the world and any situation from his individual frame of reference. An interesting aspect is that personal values may lead an individual to resist organizational pressures and goals. Conflicts of this nature could lead to an individual leaving an organization (29).

Rokeach stated that individual values function as standards that guide ongoing activities and provide plans to resolve conflicts and to make decisions. Individual values also give expression to human

needs (20:12). Further, individual values are viewed as providing cognitions-conceptions or beliefs about the world. Thus individual values have an evaluative character in that positive or negative judgments are made about objects and social systems. Individual values are therefore seen as guiding internal and external behavior. Individuals may not realize the effect values have in guiding their lives, but the influence of learned values " . . . affects how we see and feel things, how we judge them, and how our actions are shaped by those perceptions and assessments [24:382]." The importance of values as standards which guide our lives cannot be underestimated.

Conflicts and Inconsistencies

Values tend to create internal and external conflict, to show internal inconsistency, and to deny reality. Few, if any, of a person's values are the products of ratiocination. Instead, they reflect faithfully the mores and ideologies of the cultures in which the individual has lived (13:131).

Massey has stated that there are a number of different value systems in any organization because of the values embedded into people as a result of verbal, actional, and situational contexts. That is, values have been inculcated into people during the time period in which they were socialized by their family, friends, church or religion, school, and the information media, particularly radio and television

(12). Massey identified time periods of approximately ten years in duration as being a sufficient socialization period to produce a significant change in value priorities for that generation which was being socialized. The first decade of an individual's life was purported to be the most critical years in establishing his value priorities because his value system would evolve from his training (12). Thus, the principal sources of one's values are:

1. The heroes one has worshiped in the course of his development (the school, athletic, parental, and other authority figures with whom one has identified oneself) and whose values, beliefs, and standards he has introjected--usually quite uncritically.

2. One's associates and peer. whose acceptance and esteem are vital to him [13:131-132].

Massey supported his ten-year value system differential assertion by identifying some of the important values of the generations raised in the five ten-year periods between 1920 to 1970. For example, people that were raised in the 1920s were taught that family closeness, industry, and patriotism were important. People raised in the 1930s were affected by the depression and financial insecurity. On the other hand, people raised in the 1950s and 1960s were affected by affluence, permissiveness, and higher education desires.

Massey pointed to the lack of both patriotism and economic insecurity of people in their twenties today. These individuals were value programmed during a period of economic affluence and the Vietnam era. Therefore individuals in their twenties do not demonstrate

the basic economic insecurity of people in their fifties, or the patriotism of the people in their forties (12). Because different age groups were value programmed by significant events which occurred during their earlier years, value conflicts occur among different age groups.

Everyone's values were formed from a wide variety of sources and have been acquired over a period of time; hence in the aggregate a person's value system may be riddled with inconsistencies. These internalized value conflicts are often painful and anxiety-provoking. Not knowing which set of values to use as a guide, the individual resolves the problem as he does others by repressing (putting out of consciousness) those values which are in conflict. Consequently, he is no longer aware of the conflict between and among his values. Normally an individual is conscious of only one set of values at a time--those that are appropriate to the circumstances which happen to prevail (13:1 2).

Personal value systems are so ingrained and pervasive in personality that they are rarely explicitly recognized. An individual normally takes his value system for granted unless he is faced with a significant conflict which motivates deliberate introspection. The individual is rarely aware of acquiring, possessing, or changing his value system. However, individuals do acquire, possess, and modify their personal value systems (14:15).

Values vs Occupation

If values provide an all encompassing effect on a person's life, values should have some effect on occupation selection and performance. Hokenstad stated that there should be an expectation that there exists an individual value orientation consistent with that of a profession. Studies have also shown that the individual value orientation exists before selection of a profession, and attempts to change the individual's basic value system while training for a profession have failed (7:391).

Rokeach also studied the values of different professions to see if a consistent value pattern existed for each individual profession, and also whether all members of a profession, regardless of age, had the same value pattern. Since values normally differ with age, the existence of this common value system would lend support to the premise that individual values cause a person to self-select a particular profession. A study of academic professors resulted in the conclusion that ". . . academic groups are relatively homogenous in their value patterns, differing little from one another, yet differing markedly from the national sample of adult Americans [20:149]." An analysis of professors by age showed similar value patterns.

It would thus seem that academic values are determined by selective factors that predispose one to an academic career or by socialization in graduate school rather than after recruitment to a faculty position [20:149].

A similar study was undertaken using policemen as the sample. The values of policemen were found to be quite dissimilar from the values of other white and black Americans (20:150). Further

. . . Police of varying age, rank, and experience on the police force do not differ in value patterns, thus suggesting that socialization after recruitment is not a determinant of police values [20:152].

A third study of priests and seminarians concluded that their values were also distinctive as a class. The priests' and seminarians' values were also the result from initial selection and not from changes following socialization (20:153). A study by Andrew F. Sikula supported the contention that individuals within occupations and careers have unique value system characteristics (23:21). Consequently, Sikula's findings, as well as Rokeach's research on human values, indicate that a unique value system should exist among Air Force pilots.

There is evidence that individual values help determine an individual's choice of profession. Individuals arrive at a new organization with an existing set of values, attitudes, and expectations (18:163). The individual's arrival thus begins the process of socialization into the organization. During this process the individual is expected to adopt certain organizational modes of behavior and to accept the organizational values (18:163-167).

Conceivably, the initial professional choice may not be totally consistent with the individual's values. The individual's initial perceptions of a particular profession could have been wrong, thereby leading

to a value conflict between the individual's values and the organizational values. Consequently, value conflicts may cause an individual to reevaluate his relationship with the organization. He can either accept the organizational values, live with the value conflicts, or leave the organization (18:160-187). By measuring a person's perceived values of others, i. e., the occupational values, one can compare an individual's values with the perceived values of an organization. Initial studies have shown the greater the difference between one's own values and the perceived organizational values, the greater the alienation (20:324). It is logical that alienation may cause an individual to quit his job and seek another profession.

Classification of Values

Although personal values have been defined and discussed, some reflection on Milton Rokeach's ideas, upon which this research leans heavily, is in order. Rokeach directed his efforts toward establishing an understanding of an individual's ranking of values within his value system. Rokeach categorized values into either desirable modes of conduct or desirable end-states of existence. He referred to these two kinds of values as instrumental and terminal values (20:7). Instrumental and terminal values represent two separate yet functionally interconnected systems, wherein all the values concerning modes of behavior are instrumental to the attainment of all the values concerning end-states. There is not necessarily a one-to-one correspondence

between any one instrumental value and any one terminal value. One mode of behavior may be instrumental to the attainment of several terminal values; five or six modes may be instrumental to the attainment of one terminal value. Rokeach suggested that the best strategy of conceptualization is to conceive all instrumental values as modes of behavior that are instrumental to the attainment of all values concerning end-states of existence (20:12).

Rokeach has developed a value survey which measures a person's value priorities. This Value Survey Instrument, developed as a result of 25 years of study and research on values, is shown in Figure 1. The value survey is composed of 18 instrumental (mode of conduct) and 18 terminal (end-state) values (20:29). The 18 terminal values are distilled from various sources: a review of the literature, the values of 30 graduate students in psychology, Rokeach's own values, the values of 100 adults in metropolitan Lansing, Michigan, and other sources. A different procedure was followed in selecting the 18 instrumental values. The 18 instrumental values were derived from a list of 18,000 trait names originally compiled by Allport and Odbert. The original number of traits was then reduced on the basis of synonyms, words denoting temporary states, physical characteristics, negative values, and unfamiliar words (20:29).

The survey consists of ordering the 18 terminal values and the 18 instrumental values in a priority sequence. The values are

<u>Terminal Values:</u>	<u>Instrumental Values:</u>
A COMFORTABLE LIFE (a prosperous life)	AMBITIOUS (hard-working, aspiring)
AN EXCITING LIFE (a stimulating, active life)	BROADMINDED (open-minded)
A SENSE OF ACCOMPLISHMENT (lasting contribution)	CAPABLE (competent, effective)
A WORLD AT PEACE (free of war and conflict)	CHEERFUL (lighthearted, joyful)
A WORLD OF BEAUTY (beauty of nature and the arts)	CLEAN (neat, tidy)
EQUALITY (brotherhood, equal opportunity for all)	COURAGEOUS (standing up for your beliefs)
FAMILY SECURITY (taking care of loved ones)	FORGIVING (willing to pardon others)
FREEDOM (independence, free choice)	HELPFUL (working for the welfare of others)
HAPPINESS (contentedness)	HONEST (sincere, truthful)
INNER HARMONY (freedom from inner conflict)	IMAGINATIVE (daring, creative)
MATURE LOVE (sexual and spiritual intimacy)	INDEPENDENT (self-reliant, self-sufficient)
NATIONAL SECURITY (protection from attack)	INTELLECTUAL (intelligent, reflective)
PLEASURE (an enjoyable, leisurely life)	LOGICAL (consistent, rational)
SALVATION (saved, eternal life)	LOVING (affectionate, tender)
SELF-RESPECT (self-esteem)	OBEDIENT (dutiful, respectful)
SOCIAL RECOGNITION (respect, admiration)	POLITE (courteous, well-mannered)
TRUE FRIENDSHIP (close companionship)	RESPONSIBLE (dependable, reliable)
WISDOM (a mature understanding of life)	SELF-CONTROLLED (restrained, self- disciplined)

Figure 1. Rokeach's Value Survey Instrument

arranged in a priority sequence for each of the two different types of values according to their degree of importance to the respondent (20:27-28). The Value Survey can be used as a diagnostic tool to identify the goals, needs, aspirations and conflicts within and between individuals and groups. At the individual level, it can, for instance, be used to identify the value orientations of individuals within organizations. At the group level, it can be employed as a social indicator to locate the sources of conflict and value gaps between such groups as establishment and antiestablishment, superordinates, and subordinates, nation and nation, and other dichotomies (20:330).

RESEARCH OBJECTIVES

The Air Force is experiencing a low pilot retention rate. This research is divided into five parts. The basic objective of the first part of this research was to determine whether the following groups from Squadron Officers School (SOS) Class 78B have common value systems:

- a. All pilots.
- b. Pilots from each major command, i. e., Strategic Air Command (SAC), Military Airlift Command (MAC), Tactical Air Command (TAC), and Air Training Command (ATC).
- c. Pilots intending to remain on active duty.
- d. Pilots undecided about their career intentions.

- e. Pilots planning to separate from active duty.

The objective of the second part of this research was to determine whether the following groups from SOS Class 78B have common perceived organizational value systems:

- a. Pilots from each major command (SAC, MAC, TAC, and ATC).
- b. Pilots intending to remain on active duty.
- c. Pilots undecided about their career intentions.
- d. Pilots planning to separate from active duty.

The objective of the third part of this research was to determine whether the pilot personal value systems from SOS Class 78B are similar across major commands (SAC, MAC, TAC, and ATC) and across career intentions (intending to remain on active duty, undecided about their career intentions, or planning to separate from active duty).

The fourth part of this research was to determine whether the perceived organizational value systems from SOS Class 78B are similar across major commands and across career intentions.

The final objective of this research was to determine the amount of agreement between the following pilot personal and perceived organizational value systems of SOS Class 78B.

- a. By major command.
- b. By career intention.

RESEARCH QUESTIONS AND HYPOTHESES

The specific questions to be answered and the hypotheses to be tested in support of the research objectives are:

Hypothesis One: There exists a congruence of personal values among each of the following groups from Squadron Officers School (SOS) Class 78B:

- a. All pilots.
- b. Pilots within each of the different major commands (SAC, MAC, TAC, and ATC).
- c. Pilots intending to remain on active duty.
- d. Pilots undecided about their career intentions.
- e. Pilots planning to separate from active duty.

Hypothesis Two: There exists a congruence of perceived organizational values among each of the following groups from SOS Class 78B:

- a. Pilots within each of the different major commands (SAC, MAC, TAC, and ATC).
- b. Pilots intending to remain on active duty.
- c. Pilots undecided about their career intentions.
- d. Pilots planning to separate from active duty.

Research Question One: Are the pilot personal value systems from SOS Class 78B similar across major commands and across career intentions?

Research Question Two: Are the perceived Organizational value systems from SOS Class 78B similar across major commands and across career intentions?

Research Question Three: To what extent are the personal and the perceived organizational value systems of SOS Class 78B similar:

- a. By major command?
- b. By career intention?

SCOPE AND LIMITATIONS

The literature review indicated that each profession has its own set of common values. Since the group under study is limited to pilots from SOS Class 78B, the results of this research should not be extrapolated either to other Air Force pilots or to other Air Force officers.

ASSUMPTIONS

This research was based on the following assumptions:

1. There are a limited number of values that a person possesses.
2. All people possess the same values, but in different degrees.
3. Values are hierarchically organized by the individual.

4. The source of human values can be traced to culture, society, its insitutions, and personality.

5. Values affect the individual's behavior in any social setting.

CHAPTER II

METHODOLOGY

INTRODUCTION

This chapter is devoted to the research instrument and to the research methodology. The reliability and validity of the survey instruments are presented. Also, the population is defined and finally, the statistical analysis techniques are presented.

INSTRUMENT VALIDITY

Pilot Personal Values

The simplicity and brevity of the Rokeach Value Survey enable one to measure quantitatively the values of a sample drawn from any strata of American society (20:55). Findings have shown that different numbers and combinations of the 36 terminal and instrumental values differentiate significantly between groups differing in cultural variables. All the findings considered together suggest that the Value Survey is sensitive to differences between cultural groups (20:93).

Each of the values of the survey is printed on a pressure-sensitive gummed label. This gummed label method was used to make

the ranking of 18 terminal and 18 instrumental values easier than the traditional rankings normally made with pen or pencil (20:30). Further, the best reliability results have been obtained with the gummed label. Median test-retest reliabilities of terminal values increased steadily to .78-.80 for college students at Michigan State University; for instrumental values, median test-retest reliabilities increased to .70-.72 for college students at Michigan State University. The time interval between test and retest varied from 3 to 7 weeks. For longer test time intervals the test-retest reliabilities of college students was only slightly lower. For the instrumental values the median reliability was 0.65 after a 2 to 4 month interval; for terminal values, the comparable median reliability was 0.76 (20:33).

Instrumental value reliabilities have been found to be consistently lower than terminal value reliabilities. One explanation for this finding is that terminal values are learned earlier and thus become stabilized earlier in the development of the individual than do instrumental values (20:34). Another possibility is that terminal values represent ideas that are more distinctly different from one another than is the case with instrumental values (20:34).

Since the values are presented in alphabetical order, the respondent may, through order effect, tend to rank those values higher up in the alphabetical order as more important than those lower down. Early research indicated such an order effect for the

instrumental values, probably because these values were ranked after the terminal values when the respondent was more fatigued (20:40). On the other hand, there exists the possibility that the top half of the instrumental value scale happens, by chance, to contain some values that are generally regarded as more important than those contained in the second half (20:41). Research conducted with college students, however, showed that such values as intellectual, logical, and imaginative (which appear in the lower half of the list) are ranked highly. This ranking is in contrast to the rankings of a national sample. Thus, it was concluded that there is no order effect built into the value survey (20:41-42).

The effects of social desirability in responding to the value survey have been acknowledged and examined. Experimental subjects were asked to rank the terminal values under two sets of instructions. First, the subjects ranked the terminal values under standard instructions (to reflect their true feelings). Later, the subjects were asked to rank the same values, but in an order that they deemed to be socially desirable (20:42). The low correlation between the two sets of rankings indicates that there was no significant relationship between the tendency to respond in a socially desirable manner and rankings of the Value Survey under standard instructions. Consequently, the results suggest that the rankings of the terminal values cannot be explained as arising from a social desirability response set. Thus

the personal value survey does, in fact, reflect the respondent's true feeling (20:28). The personal value survey instrument is included in Appendix A.

Perceived Organizational Values

The Rokeach Value Survey has been used also as a reliable instrument to measure a person's perceived values of others--other persons, groups, organizations, institutions, and cultures (20:324). The Rokeach Value Survey was thus used to measure the SOS Class 78B pilots' perceived organizational values of their respective commands. The terminal values mature love and salvation and the instrumental values cheerful and loving were omitted because the researchers concluded that these values were not applicable to an organization. The revised survey form used to measure the perceived organizational values is included in Appendix A.

Career Intentions

To determine the individual pilot's career intentions, the following question was asked:

As of today, what are your plans for your Air Force career upon completion of your current assignment or your current active duty commitment?

- a. Definitely will separate from active duty.
- b. Fairly certain I will separate from active duty.

- c. Leaning toward separating from active duty.
- d. Neutral on whether to remain on active duty or to separate.
- e. Leaning toward remaining on active duty.
- f. Fairly certain I will remain on active duty.
- g. Definitely will remain on active duty.

Research by the Air Force Human Resources Laboratory indicated that a correlation exists between an individual's stated career intentions and actual career retention (22:1-9). Consequently, the question on career intentions was considered a valid means of determining an individual's career intentions. The researchers felt the seven responses from this question could be reclassified into three categories so as to be more meaningful. The first two responses were reclassified into the category of pilots planning to separate from active duty. The third, fourth, and fifth responses were reclassified into the category of pilots undecided about their career intentions. The last two responses were reclassified into the category of pilots intending to remain on active duty. This question and other background information collection are listed in Appendix A.

POPULATION

The population of this research consisted of the personal values, the perceived organizational values, and the career intentions

of all pilots at SOS Class 78B with eight years or less active duty service. The eight-year time period assured that this research would concentrate on both the pilots serving their initial commitment and those pilots who were undecided about their career intentions at the end of their initial career commitment. The total number of pilots assigned to SOS Class 78B at the time of this research was 213. A census of the population was taken.

Two hundred thirteen surveys were mailed to the SOS Survey monitor. The surveys were completed and returned by mail to the researchers. Each respondent provided a rank ordering of his personal terminal and instrumental values, his perceived terminal and instrumental organizational values, and a response about his career intentions. All responses were measured on an ordinal scale. The ordinal data thus required the use of non-parametric statistics.

No attempt was made to follow-up on the non-returned questionnaires because the researchers felt that the number of questionnaires returned would allow the results of tabulation and testing to be generalized with little chance of bias being present. The researchers felt that if follow-ups had been made to obtain responses, the respondents would most likely arbitrarily assign rank orders to the values which would not truly reflect their personal and perceived organizational values and would, therefore, add bias to the statistical analysis.

DESIGN TO ANSWER THE HYPOTHESES AND QUESTIONS

Common Value Hierarchy

The Kendall coefficient of concordance, W , was used to determine if each set of rankings was related among all respondents. The Kendall coefficient of concordance W measures the degree of association between a fixed number of rankings from any number (K) of respondents (21:239). Thus, the coefficient of concordance measures the degree of variance from an identical value ranking among all the respondents. If all the respondents ranked the value in exactly the same order, then the coefficient of concordance would be one. If there is complete randomness between the individual rankings, then the coefficient of concordance would approach zero. This statistic is thus useful to measure the amount of agreement among all respondents for each set of values which were ranked.²

The Kendall coefficient of concordance is computed on each set of rankings by first summing the rankings for each terminal or instrumental value from all respondents. This gives a number R_j for each terminal or instrumental value. A mean R_j for a particular value is then computed by dividing the sum R_j by the number of values ranked, N . Each R_j is then expressed as a deviation from the mean

²See Chapter Nine of Seigel's Nonparametric Statistics for a further discussion of Kendall's coefficient of concordance W .

and then squared. Finally, the sum of the squared deviations for all the different terminal or instrumental values is computed. When these calculations are completed, the coefficient of concordance W is computed using the following equation:

$$W = \frac{s}{\frac{1}{12} K^2 (N^3 - N)}$$

where

s = sum of squares of the observed deviations from the mean of R_j , that is,

$$s = \sum (R_j - \frac{\sum R_j}{N})^2$$

K = number of sets of rankings, e.g., the number of pilots who responded

N = number of terminal or instrumental values ranked for each individual set

$\frac{1}{12} K^2 (N^3 - N)$ = maximum possible sum of squared deviations.

A Kendall W was computed for each set of values ranked:

personal terminal, personal instrumental, perceived organizational terminal, and perceived organizational instrumental. The Kendall Ws thus provided a basis for testing hypotheses one and two: (1) whether a congruent value hierarchy exists among the pilot's personal values, and (2) whether a congruent value hierarchy exists among the pilots' perceptions of the organizational values. To determine if the Kendall

Ws were significant at the .95 level, a chi square hypothesis test was applied for each Kendall W.

Since the sample is larger than seven, the hypothesis test statistic is approximately distributed as chi square with $N - 1$ degrees of freedom (2:236). The test statistic is:

$$\chi^2 = K(N - 1)W$$

where

K = number of pilots who responded

N = number of instrumental or terminal values ranked

W = the Kendall W

The null and alternate hypotheses for this statistical test are:

Null hypothesis: The rankings are unrelated.

Alternate hypothesis: The rankings are related (a distinctive value system exists).

If the chi square test statistic allowed the statistical null hypothesis to be rejected at a level of $\alpha = .05$, then the Kendall W was accepted as a valid test that a common value system exists among the respondents for each individual set of values which were ranked. Rejecting this statistical null hypothesis would also indicate that if differences were discovered between the pilots' personal values and their perceived organizational values, programs designed to change the perceived values of Air Force flying organizations could be directed at the pilots' common value system.

Correlation Between Values

To determine the extent of personal and perceived organizational value differences a frequency distribution based on all the respondents' questionnaires was constructed for each value for each set of rankings (personal terminal and personal instrumental, perceived organizational terminal and perceived organizational instrumental). The frequency distributions were then used to compute the pilots' composite median for each value within each set of rankings. The composite medians were then used to rank order all the values within each particular set. The median was used as the measure of central tendency because all data were ordinal. The median is not affected by frequency distributions which deviate markedly from normality and one another (21:25; 20:56). The medians were then compared by using the Spearman rank correlation coefficient.

The Spearman rank correlation coefficient is a measure of association between two sets of objects or individuals that are ranked in two ordered series (21:202). The Spearman rank correlation measures the degree of correlation by comparing two sets of ranked objects, i.e., two different sets of values--terminal personal values versus perceived organizational terminal values. The degree of disparity between the sets is computed by subtracting the ranking of a particular value in the first set from the ranking of that same value within the second set. The magnitude of these differences is an indication of the

relation between the two sets of rank. If the rankings were perfectly matched, then all the differences would be zero. The larger the differences, the less perfect is the association between the two rankings (21:202). This statistic requires that the number of items in each set of rankings be identical. Therefore, only those values common to both the personal terminal values and the perceived organizational terminal values were used to compute this statistic. The assumption made here is that the order of the remaining individual terminal values is not affected by deleting those values which are not applicable when a comparison is made with the individual's perceived organizational values. The instrumental value comparison was also computed in this same manner. With this assumption the Spearman rho provides a method to compare the correlation between two sets of rankings.³

The steps necessary to compute the Spearman rho are:

1. List the rankings of each specific value for the two sets to be compared side by side.
2. Compute the difference, d_i , for each terminal (or instrumental value) by subtracting the ranking of a personal terminal (or instrumental value) from the corresponding perceived organizational terminal (or instrumental) value ranking.

³For a more detailed discussion of the Spearman rho correlation coefficient see Conover's section 5.5 (2:245-249) and Seigel's Nonparametric Statistics (21:202-213).

3. Square each d_i .

4. Compute the $\sum_{i=1}^N d_i^2$

5. Compute the coefficient of correlation, r_s , using the formula:

$$r_s = 1 - \left[\frac{6 \sum_{i=1}^N d_i^2}{(N^3 - N)} \right]$$

where

N = number of specific values ranked

d_i = difference between the specific value rankings.

If ties are present, then a correction factor is incorporated in the computation of r_s . Therefore it is necessary to correct the sum of squares and the correction factor is T :

$$T = \frac{t^3 - t}{12}$$

where

t = the number of observations tied at a given rank.

The sum of squares corrected for ties then becomes:

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T$$

$\sum T$ = the various values of T are summed for all the various groups of tied observations.

N = number of specific values ranked.

Finally, the coefficient of correlation, r_s , is computed using the formula:

$$r_s = \frac{\sum x^2 + \sum y^2 - \sum d^2}{2 \sqrt{\sum x^2 \sum y^2}}$$

where

$$\sum x^2 = \frac{N^3 - N}{12} - \sum T_x$$

$$\sum y^2 = \frac{N^3 - N}{12} - \sum T_y$$

A Spearman rho was computed to compare the pilots' median rankings of personal terminal values between each different command and between the different groups separated by career intentions. A Spearman rho was also completed to compare the pilots' median rankings of instrumental values between each different command and between the different groups separated by career intentions. The pilots' perceived organizational values were compared in the same manner. A Spearman rho was then computed to compare the pilots' median rankings of personal terminal values with the pilots' median rankings of perceived organizational terminal values. A Spearman rho was also computed on the pilots' median rankings of personal instrumental values and the pilots' median rankings of perceived organizational instrumental values. These statistics provided information on the degree of

correlation of the pilots' personal values between the different commands, between career intention groups, and between the pilots' personal values and their perceived organizational values. The frequency distributions and the composite median rankings provided the specific information to answer what differences exist between the pilots' personal values and their perceived organizational values.

A hypothesis test was constructed to measure the statistical significance of the Spearman rho computations. The test statistic for N of 10 or larger is distributed as a Student's t with N - 2 degrees of freedom (20:212). The test statistic is:

$$t = r_s \sqrt{\frac{N - 2}{1 - r_s^2}}$$

where

N = number of items ranked

r_s = Spearman Rho

The hypothesis for this test is a two-tailed test for correlation.

Null hypothesis: The perceived organizational values are mutually independent of the personal values.

Alternate hypothesis: There is a tendency for either the larger rankings of the personal values to be paired with the larger rankings of the perceived organizational values,

or there is a tendency for the smaller personal values to be paired with the larger perceived organizational values.

If the test statistic allowed the researcher to reject the null hypothesis at a level of significance of $\alpha = .05$, then the r_s was accepted as being a statistical valid measure of dependency between the value rankings.

If the statistical null hypothesis was rejected and the r_s was greater than 0.7, then the pilots' personal values and their perceived organizational values were considered dependent. For a positive correlation this would indicate that there should be a minimum of value conflicts between the individuals and their organization. However, if the statistical null hypothesis is not rejected, then the pilots' personal values and their organizational values must be considered independent. If the personal and organizational values are independent, this independence could cause value conflicts within Air Force flying commands.

The Kruskal-Wallis statistic T is an overall measure of the heterogeneity among samples when there are more than two populations (16:676). The steps necessary to compute the Kruskal-Wallis test statistic are:

1. Order the N observations from the smallest to the largest disregarding the k populations from which the observations came.

2. Assign ranks 1 to N to all N observations.

3. Compute the sum of the ranks assigned to the i^{th} sample, R_i , using the formula:

$$R_i = \sum_{j=1}^{n_i} R(X_{ij}), i = 1, 2, \dots, k$$

where

$R(X_{ij})$ = rank assigned to observation X_{ij}

4. Compute the test statistic:

$$T = \frac{12}{N(N+1)} \sum_{i=1}^k \frac{[R_i - (1/2)n_i(N+1)]^2}{n_i}$$

where

$$n_i = i^{\text{th}} \text{ sample size, } N = \sum_{i=1}^k n_i$$

The Kruskal-Wallis statistic T was computed for personal terminal and personal instrumental values in relation to career intentions. The Kruskal-Wallis statistic T thus provided a basis for determining whether the personal terminal and personal instrumental values for pilots intending to remain on active duty, pilots undecided about their career intentions, and pilots planning to separate from active duty were similar. The hypothesis for this test was:

Null hypothesis: The k random distributions are equal.

Alternate hypothesis: At least one population tends to yield larger observations than the rest.

To determine if the Kruskal-Wallis statistics T were significant at the .95 level, a chi square critical value was computed with two degrees of freedom. If the chi square critical value allowed the researchers to reject the null hypothesis at a level of significance of $\alpha = .05$, then the Kruskal-Wallis statistic T was accepted as being a valid measure that personal terminal and personal instrumental values for pilots intending to remain on active duty, pilots undecided about their career intentions, and pilots planning to separate from active duty did not come from the same population. However, failure to reject the null hypothesis would lend support that the three groups were equal.

ASSUMPTIONS

1. The Rokeach value survey is a valid and reliable instrument for determining the personal value hierarchy of Air Force pilots in SOS Class 78B.

2. The anonymity of the respondent would lessen the possibility of deliberate distortion of the rankings.

3. The question on career intentions provided reliable information.

4. When computing Spearman rho on personal and organizational values, deleting the extra personal values did not have an effect on the original ranking of the remaining personal values.

CHAPTER III

FINDINGS

This chapter presents the findings of our research efforts.

SURVEY RESPONSE

Of the 213 value surveys distributed, 170 (79.8%) were returned. However, because ten surveys were incomplete, the research was conducted on a sample size of 160 (75.12%) respondents. The 160 usable responses were input into the computer and separated into the following major commands: Strategic Air Command (SAC), Military Airlift Command (MAC), Tactical Air Command (TAC), and Air Training Command (ATC). The researchers used the Statistical Package for the Social Sciences and Fortran programs to produce usable data by command (SAC, MAC, TAC, ATC), type of value (terminal, instrumental), career intentions (remaining on active duty, undecided, and separating from active duty), value name (e.g., broadminded), and perceived organizational data (pilots' perceptions of SAC, MAC, TAC, ATC). The computer output provided frequency distributions, medians for all values, Kendall Coefficients of Concordance, and Spearman rhos. Kruskal-Wallis, chi-square, and

chi-square critical values were manually computed by the research team.

SURVEY RESULTS

Table 1 presents the personal terminal value medians and composite rank orders for all pilots; Table 2 presents the personal instrumental value medians and composite rank orders for all pilots.

Table 3 presents the personal terminal value medians and composite rank orders for SAC, MAC, TAC, and ATC pilots; Table 4 presents the personal instrumental value medians and composite rank orders for SAC, MAC, TAC, and ATC pilots.

Table 5 presents the personal perceived terminal organizational value medians and composite rank orders for SAC, MAC, TAC, and ATC; Table 6 presents the personal perceived instrumental organizational value medians and composite rank orders for SAC, MAC, TAC, and ATC.

Table 7 presents the personal terminal value medians and composite rank orders for pilots intending to remain on active duty, undecided, and separating from active duty; Table 8 presents personal instrumental value medians and composite rank orders for pilots intending to remain on active duty, undecided, and separating from active duty.

Table 9 presents the personal perceived terminal organizational value medians and composite rank orders for pilots intending to

Table 1

Personal Terminal Value Medians and Composite Rank
Orders for All Pilots
N = 160

Value		All Pilots	
1	A Comfortable Life	11.92	(13)
2	An Exciting Life	10.79	(12)
3	A Sense of Accomplishment	7.29	(5)
4	A World at Peace	9.68	(10)
5	A World of Beauty	15.38	(18)
6	Equality	13.10	(14)
7	Family Security	3.27	(1)
8	Freedom	3.50	(2)
9	Happiness	6.89	(4)
10	Inner Harmony	8.59	(7)
11	Mature Love	8.90	(8)
12	National Security	7.32	(6)
13	Pleasure	14.68	(17)
14	Salvation	13.94	(15)
15	Self-respect	4.88	(3)
16	Social Recognition	13.96	(16)
17	True Friendship	10.07	(11)
18	Wisdom	9.50	(9)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 2

Personal Instrumental Value Medians and Composite Rank
Orders for All Pilots
N = 160

Value	All Pilots
1. Ambitious	9.23 (9)
2. Broadminded	7.32 (5)
3. Capable	5.85 (3)
4. Cheerful	13.76 (15)
5. Clean	16.28 (18)
6. Courageous	6.68 (4)
7. Forgiving	11.97 (14)
8. Helpful	10.79 (12)
9. Honest	1.96 (1)
10. Imaginative	10.38 (11)
11. Independent	8.50 (8)
12. Intellectual	11.38 (13)
13. Logical	7.83 (7)
14. Loving	9.83 (10)
15. Obedient	14.83 (17)
16. Polite	14.26 (16)
17. Responsible	3.16 (2)
18. Self-controlled	7.65 (6)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 3

Personal Terminal Value Medians and Composite Rank Orders
for SAC, MAC, TAC, and ATC Pilots

Value	N =	SAC	MAC	TAC	ATC
		62	33	25	28
1. A Comfortable Life		10.50 (11)	12.38 (13)	13.88 (14)	10.17 (11)
2. An Exciting Life		11.17 (13)	9.33 (9)	11.13 (11.5)	11.50 (14)
3. A Sense of Accomplishment		7.21 (6)	8.20 (5)	6.25 (6)	7.50 (6)
4. A World at Peace		9.25 (8)	10.75 (12)	8.00 (8)	10.50 (12.5)
5. A World of Beauty		15.17 (18)	15.25 (18)	14.00 (15.5)	16.00 (18)
6. Equality		13.50 (14)	12.75 (14)	11.25 (11.5)	13.50 (15.5)
7. Family Security		3.25 (2)	3.08 (1)	4.75 (3)	3.00 (1)
8. Freedom		3.20 (1)	3.75 (2)	3.00 (1)	4.83 (3)
9. Happiness		6.28 (4)	6.58 (4)	11.63 (13)	6.83 (4)
10. Inner Harmony		8.75 (7)	9.00 (8)	10.00 (9)	7.50 (6)
11. Mature Love		9.64 (9)	8.33 (6.5)	7.00 (7)	7.50 (6)
12. National Security		6.50 (5)	9.38 (10)	4.13 (2)	8.50 (8)
13. Pleasure		14.28 (16)	14.63 (17)	15.25 (18)	15.00 (17)
14. Salvation		14.50 (17)	13.33 (15)	14.75 (17)	10.50 (12.5)
15. Self-Respect		4.83 (3)	4.94 (3)	5.67 (5)	4.50 (2)
16. Social Recognition		13.90 (15)	14.00 (16)	14.00 (15.5)	13.50 (15.5)
17. True Friendship		10.90 (12)	8.33 (6.5)	10.25 (10)	10.10 (10)
18. Wisdom		10.30 (10)	9.67 (11)	5.33 (4)	10.00 (9)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 4

Personal Instrumental Value Medians and Composite Rank Orders
for SAC, MAC, TAC, and ATC Pilots

Value	N =	SAC 62	MAC 33	TAC 25	ATC 28
1. Ambitious		9.00 (8)	9.00 (9)	10.25 (12)	10.50 (10)
2. Broadminded		6.33 (4)	7.63 (6)	9.00 (9)	6.83 (5)
3. Capable		5.83 (3)	6.13 (3)	4.00 (2)	6.10 (3)
4. Cheerful		13.96 (15)	14.40 (16)	12.75 (14)	13.17 (15)
5. Clean		16.50 (18)	15.88 (18)	16.56 (18)	15.00 (17)
6. Courageous		7.25 (5)	7.00 (5)	5.00 (4)	7.50 (6)
7. Forgiving		11.83 (13)	12.08 (14)	13.25 (15)	11.17 (11)
8. Helpful		11.10 (12)	10.67 (12)	10.00 (11)	11.25 (12)
9. Honest		1.96 (1)	2.19 (1)	1.75 (1)	1.50 (1)
10. Imaginative		10.50 (11)	10.14 (11)	8.75 (7)	11.50 (13)
11. Independent		9.30 (9)	6.38 (4)	7.00 (5)	9.10 (9)
12. Intellectual		12.30 (14)	10.75 (13)	9.38 (13)	12.50 (14)
13. Logical		7.50 (6)	8.13 (7)	8.75 (7)	7.67 (7)
14. Loving		10.25 (10)	9.25 (10)	12.25 (13)	8.83 (8)
15. Obedient		14.64 (16)	15.08 (17)	14.63 (17)	15.70 (18)
16. Polite		15.07 (17)	13.86 (15)	14.13 (16)	13.75 (16)
17. Responsible		3.20 (2)	2.63 (2)	4.25 (3)	2.75 (2)
18. Self-controlled		7.64 (7)	8.25 (8)	8.75 (7)	6.50 (4)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 5

Personal Perceived Terminal Organizational Value Medians and
Composite Rank Orders for SAC, MAC, TAC, and ATC

Value	N =	SAC	MAC	TAC	ATC
		62	33	25	28
1. A Comfortable Life		9.83 (11)	9.00 (9)	10.00 (11)	9.17 (10)
2. An Exciting Life		9.17 (8)	7.00 (6.5)	5.13 (4)	7.50 (8)
3. A Sense of Accomplishment		4.25 (3)	3.81 (3)	4.13 (3)	3.36 (2)
4. A World at Peace		2.69 (2)	3.00 (2)	3.75 (2)	4.50 (3.5)
5. A World of Beauty		15.30 (16)	15.13 (16)	14.00 (16)	15.50 (16)
6. Equality		5.39 (5)	6.38 (5)	7.13 (6)	5.83 (5)
7. Family Security		9.50 (9.5)	11.33 (13)	9.00 (8)	9.00 (9)
8. Freedom		5.30 (4)	8.75 (8)	9.67 (10)	7.17 (7)
9. Happiness		11.83 (14)	11.00 (11.5)	12.00 (13)	10.50 (11.5)
10. Inner Harmony		11.00 (13)	11.00 (11.5)	12.75 (14)	12.83 (14)
11. National Security		1.24 (1)	1.92 (1)	1.16 (1)	2.25 (1)
12. Pleasure		12.94 (15)	12.33 (14)	13.13 (15)	13.50 (15)
13. Self-respect		6.83 (6.5)	7.00 (6.5)	8.20 (7)	7.10 (6)
14. Social Recognition		6.83 (6.5)	4.63 (4)	7.00 (5)	4.50 (3.5)
15. True Friendship		10.75 (12)	9.63 (10)	9.60 (9)	11.50 (13)
16. Wisdom		9.50 (9.5)	12.60 (15)	10.25 (12)	10.50 (11.5)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 6

Personal Perceived Instrumental Organizational Value Medians and
Composite Rank Orders for SAC, MAC, TAC, and ATC

Value	N =	SAC 62	MAC 33	TAC 25	ATC 28
1. Ambitious		3.00 (3)	3.33 (1)	2.40 (1)	3.30 (3)
2. Broadminded		11.83 (14)	12.00 (13)	11.38 (13)	10.83 (11)
3. Capable		2.96 (2)	3.94 (4)	3.67 (4)	3.17 (2)
4. Clean		8.50 (7)	8.63 (9)	9.25 (9)	8.50 (7)
5. Courageous		10.93 (11)	12.33 (14)	12.08 (15)	13.50 (15.5)
6. Forgiving		13.96 (16)	14.00 (16)	14.25 (16)	13.50 (15.5)
7. Helpful		9.30 (9)	8.33 (8)	10.67 (12)	10.00 (10)
8. Honest		11.75 (13)	10.00 (10)	10.63 (11)	8.00 (6)
9. Imaginative		12.21 (15)	12.86 (15)	12.00 (14)	12.00 (13)
10. Independent		11.50 (12)	11.33 (12)	10.20 (10)	13.00 (14)
11. Intellectual		9.21 (8)	10.38 (11)	9.00 (7)	11.17 (12)
12. Logical		7.94 (6)	6.80 (6)	6.88 (6)	8.90 (8)
13. Obedient		2.65 (1)	3.60 (3)	3.00 (2)	2.67 (1)
14. Polite		10.07 (10)	8.25 (7)	9.20 (8)	9.50 (9)
15. Responsible		3.25 (4)	3.58 (2)	3.57 (3)	3.94 (4)
16. Self-controlled		4.96 (5)	6.00 (5)	5.00 (5)	5.50 (5)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 7

Personal Terminal Value Medians and Composite Rank Orders for
Pilots Intending To Remain on Active Duty, Undecided, and
Separating from Active Duty

Value	N =	Remaining 54	Undecided 86	Separating 19
1. A Comfortable Life		12.70 (13)	11.50 (13)	12.00 (13)
2. An Exciting Life		10.50 (11.5)	11.36 (12)	9.25 (11)
3. A Sense of Accomplishment		7.70 (6)	7.14 (6)	8.00 (7.5)
4. A World at Peace		10.07 (10)	9.00 (8.5)	9.75 (12)
5. A World of Beauty		16.61 (18)	14.83 (18)	15.13 (18)
6. Equality		13.00 (14)	13.00 (14)	14.25 (15.5)
7. Family Security		3.23 (1)	3.05 (1)	5.00 (2)
8. Freedom		4.00 (2)	3.29 (2)	5.00 (2)
9. Happiness		7.50 (4.5)	6.50 (4)	6.25 (4.5)
10. Inner Harmony		8.50 (7.5)	8.90 (7)	6.75 (6)
11. Mature Love		9.17 (9)	9.00 (8.5)	6.25 (4.5)
12. National Security		7.50 (4.5)	7.10 (5)	8.00 (7.5)
13. Pleasure		15.25 (17)	14.50 (16.5)	14.25 (15.5)
14. Salvation		13.83 (16)	13.83 (15)	15.00 (17)
15. Self-respect		4.50 (3)	5.12 (3)	5.00 (2)
16. Social Recognition		13.70 (15)	14.50 (16.5)	13.88 (14)
17. True Friendship		10.50 (11.5)	10.20 (11)	8.75 (10)
18. Wisdom		8.50 (7.5)	9.88 (10)	8.25 (9)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 8
Personal Instrumental Value Medians and Composite Rank Orders for
Pilots Intending To Remain on Active Duty, Undecided, and
Separating from Active Duty

Value	N =	Remaining 54	Undecided 86	Separating 19
1. Ambitious		9.36 (9)	8.50 (9)	11.25 (14)
2. Broadminded		7.30 (6)	7.30 (6)	7.25 (6)
3. Capable		5.50 (3)	5.68 (3)	7.33 (7)
4. Cheerful		13.86 (16)	13.58 (15)	14.13 (15)
5. Clean		16.68 (18)	16.05 (18)	15.00 (17)
6. Courageous		6.25 (4)	7.17 (4.5)	5.75 (3)
7. Forgiving		12.33 (14)	12.06 (14)	11.00 (13)
8. Helpful		11.60 (12)	10.64 (10)	10.25 (11)
9. Honest		2.17 (1)	1.68 (1)	2.33 (1)
10. Imaginative		10.21 (11)	10.8 (12)	9.13 (10)
11. Independent		9.50 (10)	7.5 (7)	7.00 (5)
12. Intellectual		12.17 (13)	11.5 (13)	10.40 (12)
13. Logical		7.17 (5)	8.08 (8)	7.67 (8)
14. Loving		8.50 (8)	10.75 (11)	6.00 (4)
15. Obedient		13.00 (15)	15.04 (17)	15.75 (18)
16. Polite		13.88 (17)	14.57 (16)	14.33 (16)
17. Responsible		3.06 (2)	3.30 (2)	3.13 (2)
18. Self-controlled		8.00 (7)	7.17 (4.5)	8.67 (9)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

Table 9

Personal Perceived Terminal Organizational Value Medians and
Composite Rank Orders for Pilots Intending To Remain on Active
Duty, Undecided, and Separating from Active Duty

Value	N =	Remaining 54	Undecided 86	Separating 19
1. A Comfortable Life		9.90 (10)	9.79 (9)	7.25 (7)
2. An Exciting Life		8.67 (8)	7.38 (7)	5.33 (5)
3. A Sense of Accomplishment		4.79 (3)	3.65 (3)	5.25 (4)
4. A World at Peace		2.50 (2)	3.36 (2)	5.00 (3)
5. A World of Beauty		15.34 (16)	15.06 (16)	13.75 (16)
6. Equality		5.64 (4)	6.17 (5)	7.00 (6)
7. Family Security		9.20 (9)	10.07 (10)	8.13 (9)
8. Freedom		7.50 (7)	6.83 (6)	10.67 (12)
9. Happiness		11.25 (14)	11.90 (13.5)	10.25 (11)
10. Inner Harmony		10.93 (13)	11.90 (13.5)	10.75 (13)
11. National Security		1.34 (1)	1.34 (1)	3.00 (1)
12. Pleasure		13.00 (15)	12.80 (15)	10.00 (10)
13. Self-respect		6.79 (6)	7.50 (8)	8.00 (8)
14. Social Recognition		6.38 (5)	6.13 (4)	3.75 (2)
15. True Friendship		9.93 (11)	10.50 (11.5)	11.00 (14)
16. Wisdom		10.25 (12)	10.50 (11.5)	12.67 (15)

Note: Figures shown are median rankings and, in parentheses, composite rank orders.

remain on active duty, undecided, and separating from active duty; Table 10 presents the personal perceived instrumental organizational value medians and composite rank orders for pilots intending to remain on active duty, undecided, and separating from active duty.

STATISTICAL EVALUATION OF DATA

Tables 11 through 16 and Figures 2 through 7 summarize the results of all statistical tests outlined in Chapter II. An alpha equal to 0.05 was used to compute all critical values.

KENDALL COEFFICIENT OF CONCORDANCE, W

a. All Pilots' Personal Values (see Table 11).

1. Terminal Values. A W of 0.2976 was computed with a chi square test statistic of 809.5. The chi square critical value was 27.6 and thus the null hypothesis was rejected and the rankings were shown to be related.

2. Instrumental Values. A W of 0.3348 was computed with a chi square test statistic of 910.7. The chi square critical value was 27.6 and thus the null hypothesis was rejected and the rankings were shown to be related.

b. Pilots' Personal Values by Command (see Table 12).

1. Terminal Values. A W of 0.3294 was computed with a chi square test statistic of 347.2 for SAC pilots. A W of 0.2552 was

Table 10

Personal Perceived Instrumental Organizational Value Medians and
Composite Rank Orders for Pilots Intending To Remain in Active
Duty, Undecided, and Separating from Active Duty

Value	N =	Remaining 54	Undecided 86	Separating 19
1. Ambitious		3.83 (4)	2.80 (1)	3.13 (2)
2. Broadminded		11.28 (11)	12.05 (15)	10.66 (11)
3. Capable		3.23 (3)	3.17 (3)	4.20 (4)
4. Clean		9.75 (10)	7.90 (6)	8.75 (8)
5. Courageous		12.00 (13)	11.13 (13)	13.06 (15)
6. Forgiving		13.75 (16)	14.23 (16)	12.75 (14)
7. Helpful		9.25 (8)	9.83 (8)	9.25 (9)
8. Honest		11.50 (12)	10.33 (11)	10.25 (10)
9. Imaginative		12.50 (15)	11.93 (14)	13.25 (16)
10. Independent		12.10 (14)	10.50 (12)	11.00 (13)
11. Intellectual		9.50 (9)	10.06 (9)	10.75 (12)
12. Logical		6.94 (6)	8.14 (7)	7.00 (6.5)
13. Obedient		3.06 (1)	2.81 (2)	2.67 (1)
14. Polite		8.90 (7)	10.13 (10)	7.00 (6.5)
15. Responsible		3.13 (2)	3.55 (4)	3.92 (3)
16. Self-controlled		5.83 (5)	4.65 (5)	6.00 (5)

Table 11

Kendall Coefficient of Concordance, W
All Pilots' Values

Terminal	Instrumental
W = 0.2976	W = 0.3348
$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$
$\chi^2_0 = 809.5$	$\chi^2_0 = 910.7$
Reject H_0	Reject H_0

computed with a chi square test statistic of 143.2 for MAC pilots. A W of 0.3601 was computed with a chi square test statistic of 153.0 for TAC pilots. A W of 0.3185 was computed with a chi square test statistic of 151.6 for ATC pilots. The chi square critical value for all the above computations was 27.6. Therefore the null hypothesis was rejected in each case, and the pilots' rankings within each command were shown to be related.

2. Instrumental Values. A W of 0.3679 was computed with a chi square test statistic of 387.8 for SAC pilots. A W of 0.3667 was computed with a chi square test statistic of 205.7 for MAC pilots. A W of 0.3372 was computed with a chi square test statistic of 160.5 for TAC pilots. A W of 0.3180 was computed with a chi square test statistic of 292.0 for ATC pilots. The chi square critical value for

Table 12

Kendall Coefficient of Concordance, W
Pilots' Personal Values by Major Command

SAC			MAC		
Terminal	Instrumental	Terminal	Terminal	Instrumental	
W = 0.3294	W = 0.3679	W = 0.2552	W = 0.3667		
$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$		
$\chi^2_0 = 347.2$	$\chi^2_0 = 387.8$	$\chi^2_0 = 143.2$	$\chi^2_0 = 205.7$		
Reject H_0	Reject H_0	Reject H_0	Reject H_0		
TAC			ATC		
Terminal	Instrumental	Terminal	Terminal	Instrumental	
W = 0.3601	W = 0.3372	W = 0.3185	W = 0.3180		
$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$		
$\chi^2_0 = 153.0$	$\chi^2_0 = 160.5$	$\chi^2_0 = 151.6$	$\chi^2_0 = 292.0$		
Reject H_0	Reject H_0	Reject H_0	Reject H_0		

all the above computations was 27.6. Therefore the null hypothesis was rejected in each case, and the pilots' rankings within each command were shown to be related.

c. Pilots' Perceived Organizational Values by Command
(see Table 13).

1. Terminal Values. A W of 0.4862 was computed with a chi square test statistic of 452.2 for SAC pilots. A W of 0.3769 was computed with a chi square test statistic of 186.6 for MAC pilots. A W of 0.3446 was computed with a chi square test statistic of 129.2 for TAC pilots. A W of 0.3579 was computed with a chi square test statistic of 150.3 for ATC pilots. The chi square critical value for all the above computations was 25.0. Therefore the null hypothesis was rejected in each case, and the pilots' rankings within each command were shown to be related.

2. Instrumental Values. A W of 0.5056 was computed with a chi square test statistic of 470.2 for SAC pilots. A W of 0.4105 was computed with a chi square test statistic of 203.2 for MAC pilots. A W of 0.4223 was computed with a chi square test statistic of 158.4 for TAC pilots. A W of 0.3922 was computed with a chi square test statistic of 164.7 for ATC pilots. Therefore the null hypothesis was rejected in each case, and the pilots' rankings within each command were shown to be related.

Table 13

Kendall Coefficient of Concordance, W
Pilots' Perceived Organizational Values by Major Command

SAC			MAC		
Terminal	Instrumental	Terminal	Terminal	Instrumental	Instrumental
$W = 0.4862$	$W = 0.5056$	$W = 0.3769$	$W = 0.3769$	$W = 0.4105$	$W = 0.4105$
$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$
$\chi^2_0 = 452.2$	$\chi^2_0 = 470.2$	$\chi^2_0 = 186.6$	$\chi^2_0 = 186.6$	$\chi^2_0 = 203.2$	$\chi^2_0 = 203.2$
Reject H_0	Reject H_0	Reject H_0	Reject H_0	Reject H_0	Reject H_0
TAC			ATC		
Terminal	Instrumental	Terminal	Terminal	Instrumental	Instrumental
$W = 0.3446$	$W = 0.4223$	$W = 0.3579$	$W = 0.3579$	$W = 0.3922$	$W = 0.3922$
$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$
$\chi^2_0 = 129.2$	$\chi^2_0 = 158.4$	$\chi^2_0 = 150.3$	$\chi^2_0 = 150.3$	$\chi^2_0 = 164.7$	$\chi^2_0 = 164.7$
Reject H_0	Reject H_0	Reject H_0	Reject H_0	Reject H_0	Reject H_0

d. Pilots' Personal Values by Career Intentions (see Table 14).

1. Terminal Values. A W of 0.3422 was computed with a chi square test statistic of 314.1 for pilots intending to remain on active duty. A W of 0.2908 was computed with a chi square test statistic of 425.1 for the pilots undecided about their career status. A W of 0.2521 was computed with a chi square test statistic of 81.4 for the pilots intending to separate from active duty. The chi square critical value for all the above computations was 27.6. Therefore the null hypothesis is rejected in each case and each set of rankings was shown to be related.

2. Instrumental Values. A W of 0.3631 was computed with a chi square test statistic of 333.3 for the pilots intending to remain on active duty. A W of 0.3331 was computed with a chi square test statistic of 487.0 for pilots undecided about their career intentions. A W of 0.3311 was computed with a chi square test statistic of 107.0 for the pilots intending to separate from active duty. The chi square critical value for all the above computations was 27.6. Therefore the null hypothesis was rejected in each case, and each set of rankings was shown to be related.

e. Pilots' Perceived Organizational Values by Career Intentions (see Table 15).

Table 14

Kendall Coefficient of Concordance, W
Pilots' Personal Values by Career Intentions

Remaining on Active Duty	
Terminal	Instrumental
$W = 0.3422$	$W = 0.3631$
$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$
$\chi^2_0 = 314.1$	$\chi^2_0 = 333.3$
Reject H_0	Reject H_0
Undecided	
Terminal	Instrumental
$W = 0.2908$	$W = 0.3331$
$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$
$\chi^2_0 = 425.1$	$\chi^2_0 = 487.0$
Reject H_0	Reject H_0
Separating from Active Duty	
Terminal	Instrumental
$W = 0.2521$	$W = 0.3311$
$\chi^2_{\text{critical}} = 27.6$	$\chi^2_{\text{critical}} = 27.6$
$\chi^2_0 = 81.4$	$\chi^2_0 = 107.0$
Reject H_0	Reject H_0

Table 15

Kendall Coefficient of Concordance, W
Pilots' Perceived Organizational Values by Career Intentions

Remaining on Active Duty	
Terminal	Instrumental
$W = 0.3865$	$W = 0.4227$
$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$
$\chi^2_0 = 313.1$	$\chi^2_0 = 342.4$
Reject H_0	Reject H_0
Undecided	
Terminal	Instrumental
$W = 0.4188$	$W = 0.4656$
$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$
$\chi^2_0 = 540.3$	$\chi^2_0 = 600.6$
Reject H_0	Reject H_0
Separating from Active Duty	
Terminal	Instrumental
$W = 0.2528$	$W = 0.3817$
$\chi^2_{\text{critical}} = 25.0$	$\chi^2_{\text{critical}} = 25.0$
$\chi^2_0 = 72.1$	$\chi^2_0 = 108.8$
Reject H_0	Reject H_0

1. Terminal Values. A W of 0.3865 was computed with a chi square test statistic of 313.1 for the pilots intending to remain on active duty. A W of 0.4188 was computed with a chi square test statistic of 540.3 for the pilots undecided about their career intentions. A W of 0.2528 was computed with a chi square test statistic of 72.1 for the pilots intending to separate from active duty. The chi square critical value for all the above computations was 25.0. Therefore the null hypothesis was rejected in each case, and each set of rankings was shown to be related.

2. Instrumental Values. A W of 0.4227 was computed with a chi square test statistic of 342.4 for the pilots intending to remain on active duty. A W of 0.4656 was computed with a chi square test statistic of 600.6 for the pilots undecided about their career intentions. A W of 0.3817 was computed with a chi square test statistic of 108.8 for the pilots intending to separate from active duty. The chi square critical value for all the above computations was 25.0. Therefore the null hypothesis was rejected in each case, and each set of rankings was shown to be related.

SPEARMAN RHO

a. Pilots' Personal Values by Command (see Figures 2a and 2b).

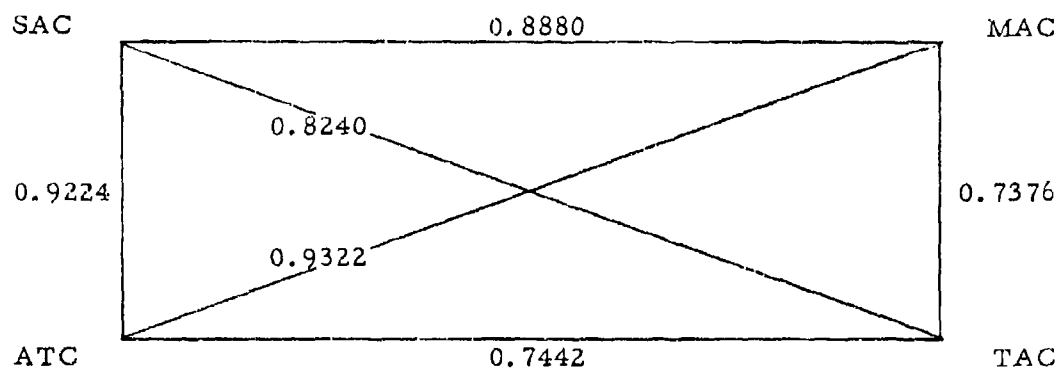


Figure 2a. Terminal Values

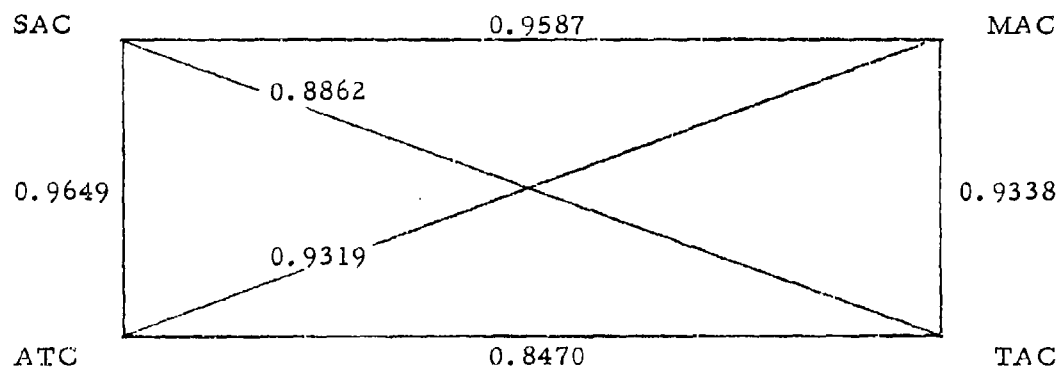


Figure 2b. Instrumental Values

Spearman Rho Correlations Between Pilots' Personal
Values in SAC, MAC, TAC, and ATC

1. Terminal Values. The following r_s values and T test statistics were computed when comparing the pilots' personal terminal values by command: an r_s of 0.8880 with a T of 7.72 for SAC and MAC pilots, an r_s of 0.8240 with a T of 5.82 for SAC and TAC pilots, an r_s of 0.9224 with a T of 9.55 for SAC and ATC pilots, an r_s of 0.7376 with a T of 4.37 for MAC and TAC pilots, an r_s of 0.9322 with a T of 10.30 for MAC and ATC pilots, an r_s of 0.7442 with a T of 4.46 for TAC and ATC pilots. The T critical value for all the above Spearman rho comparisons was 2.12. Therefore the null hypothesis was rejected in each case, and each set of rankings indicated a statistical significant dependency.

2. Instrumental Values. The following r_s values and T test statistics were computed when comparing the pilots' instrumental values by command: an r_s of 0.9587 with a T of 13.48 for SAC and MAC pilots, an r_s of 0.8862 with a T of 7.65 for SAC and TAC pilots, an r_s of 0.9649 with a T of 14.70 for SAC and ATC pilots, an r_s of 0.9338 with a T of 10.44 for MAC and TAC pilots, an r_s of 0.9319 with a T of 10.27 for MAC and ATC pilots, an r_s of 0.8470 with a T of 6.37 for TAC and ATC pilots. The T critical values for all the above Spearman rho comparisons was 2.12. Therefore the null hypothesis was rejected in each case, and each set of rankings indicated a statistical significant dependency.

b. Pilots' Perceived Organizational Values by Command
(see Figures 3a and 3b).

1. Terminal Values. The following r_s values and T test statistics were computed when comparing the pilots' perceived organizational values by command: an r_s of 0.8754 with a T of 6.78 for SAC and MAC pilots, an r_s of 0.8894 with a T of 7.28 for SAC and TAC pilots, an r_s of 0.9484 with a T of 11.19 for SAC and ATC pilots, an r_s of 0.9102 with a T of 8.22 for MAC and TAC pilots, an r_s of 0.9226 with a T of 8.95 for MAC and ATC pilots, an r_s of 0.9219 with a T of 8.90 for TAC and ATC pilots. The T critical value for all the above Spearman rho comparisons was 2.145. Therefore the null hypothesis was rejected in each case, and each set of rankings indicated a statistical significant dependency.

2. Instrumental Values. The following r_s values and T test statistics were computed when comparing the pilots' perceived organizational values by command: an r_s of 0.9147 with a T of 8.47 for SAC and MAC pilots, an r_s of 0.9206 with a T of 8.82 for SAC and TAC pilots, an r_s of 0.8403 with a T of 5.80 for SAC and ATC pilots, an r_s of 0.9382 with a T of 10.14 for MAC and TAC pilots, an r_s of 0.9065 with a T of 8.03 for MAC and ATC pilots, an r_s of 0.8609 with a T of 6.33 for TAC and ATC pilots. The T critical value for the above Spearman rho comparisons was 2.145. Therefore the null

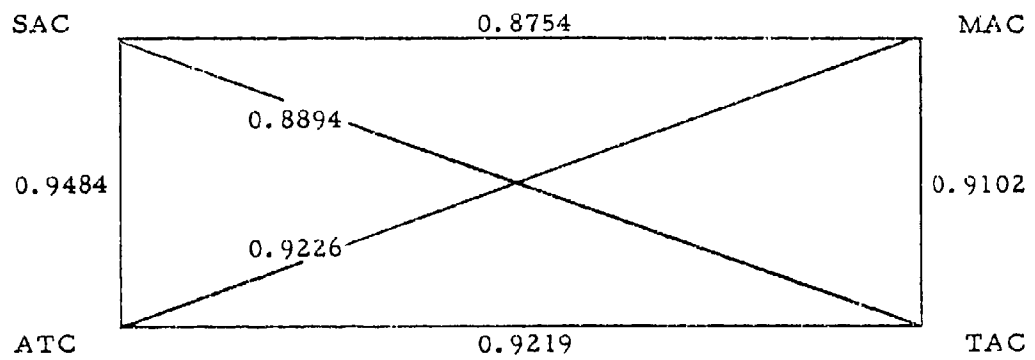


Figure 3a. Terminal Values

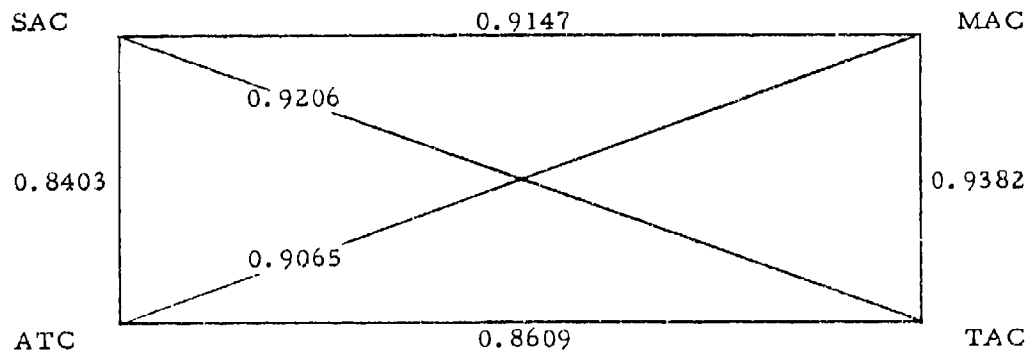


Figure 3b. Instrumental Values

Spearman Rho Correlations Between Pilots' Perceived
Organizational Values in SAC, MAC, TAC, and ATC

hypothesis was rejected in each case, and each set of rankings indicated a statistical significant dependency.

c. Pilots' Personal Values and Their Perceived Organizational Values by Command (see Figures 4a and 4b).

1. Terminal Values. The following r_s values and T test statistics were computed when comparing the pilots' personal values with their perceived organizational values of their assigned command: an r_s of 0.3918 with a T of 1.59 for SAC pilots, an r_s of 0.0648 with a T of 0.24 for MAC pilots, an r_s of 0.4047 with a T of 1.66 for TAC pilots, an r_s of 0.1954 with a T of 0.75 for ATC pilots. The T critical value for all the above Spearman rho comparisons was 2.145. Therefore the null hypothesis could not be rejected in each case and the rankings were statistically independent.

2. Instrumental Values. The following r_s values and T test statistics were computed when comparing the pilots' personal values with their perceived organizational values of their assigned command: an r_s of 0.0176 with a T of 0.66 for SAC pilots, an r_s of 0.0647 with a T of 0.24 for MAC pilots, an r_s of -0.0531 with a T of -0.20 for TAC pilots, an r_s of 0.1501 with a T of 0.57 for ATC pilots. The T critical value for all the above Spearman rho comparisons was 2.145. Therefore the null hypothesis could not be rejected in each case and the rankings were statistically independent.

<u>Organization</u>		<u>Pilots</u>
SAC	0.3918	SAC
MAC	0.0648	MAC
TAC	0.4047	TAC
ATC	0.1954	ATC

Figure 4a. Terminal Values

<u>Organization</u>		<u>Pilots</u>
SAC	0.0176	SAC
MAC	0.0647	MAC
TAC	-0.0531	TAC
ATC	0.1501	ATC

Figure 4b. Instrumental Values

Spearman Rho Correlations Between Pilots' Personal
Values and Pilots' Perceived Organizational Values

d. Pilots' Personal Values by Career Intentions (see Figures 5a and 5b).

1. Terminal Values. The following r_s values and T test statistics were computed when comparing the pilots' personal values: an r_s of 0.9917 with a T of 30.85 for the pilots intending to remain on active duty and the pilots undecided about their career intentions; an r_s of 0.9533 with a T of 12.63 for the pilots intending to remain on active duty and the pilots planning to separate from active duty; an r_s of 0.9611 with a T of 13.92 for the pilots undecided about their career intentions and the pilots planning to separate from active duty. The T critical value for all the above Spearman rho comparisons was 2.12. Therefore the null hypothesis was rejected in each case, and each set of rankings indicated a statistical significant dependency.

2. Instrumental Values. The following r_s values and T test statistics were computed when comparing the pilots' personal values: an r_s of 0.9541 with a T of 12.74 for the pilots intending to remain on active duty and the pilots undecided about their career intentions; and r_s of 0.8947 with a T of 8.01 for the pilots intending to remain on active duty and the pilots planning to separate from active duty; an r_s of 0.8601 with a T of 6.74 for the pilots undecided about their career intentions and the pilots planning to separate from active duty. The T critical value for all the above Spearman rho

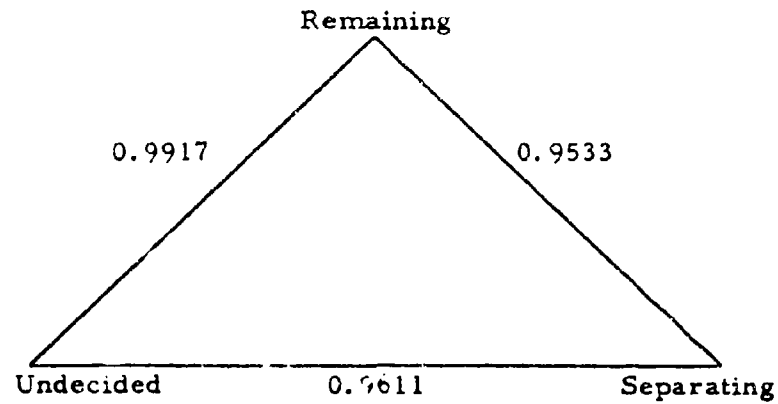


Figure 5a. Terminal Values

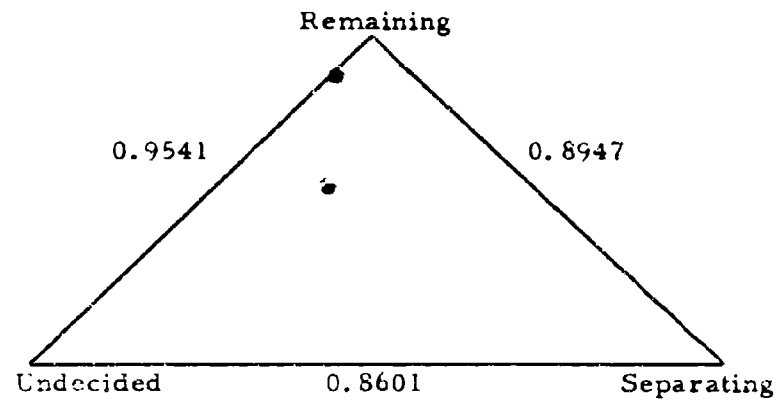


Figure 5b. Instrumental Values

Spearman Rho Correlations Between Pilots' Personal
Values for Pilots Intending To Remain on Active
Duty, Undecided, and Separating from
Active Duty

comparisons was 2.12. Therefore the null hypothesis was rejected in each case, and each set of rankings indicated a statistical significant dependency.

e. Pilots' Perceived Organizational Values by Career Intentions (see Figures 6a and 6b).

1. Terminal Values. The following r_s values and T test statistics were computed when comparing the pilots' perceived organizational values: an r_s of 0.9838 with a T of 20.53 for the pilots intending to remain on active duty and the pilots undecided about their career intentions; an r_s of 0.8324 with a T of 5.62 for the pilots intending to remain on active duty and the pilots planning to separate from active duty; an r_s of 0.8498 with a T of 6.03 for the pilots undecided about their career intentions and the pilots planning to separate from active duty. The T critical value for all the above Spearman rho comparisons was 2.145. Therefore the null hypothesis was rejected in each case, and each set of rankings indicated a statistical significant dependency.

2. Instrumental Values. The following r_s and T test statistics were computed when comparing the pilots' perceived organizational values: an r_s of 0.9088 with a T of 8.15 for the pilots intending to remain on active duty and the pilots undecided about their career intentions; an r_s of 0.9492 with a T of 11.28 for the pilots intending to remain on active duty and the pilots planning to separate from active

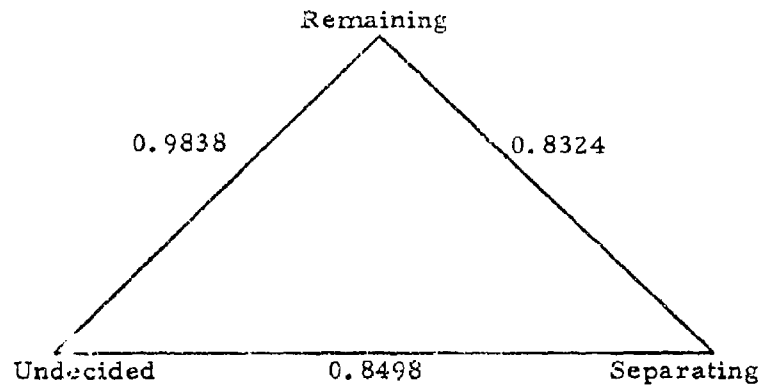


Figure 6a. Terminal Values

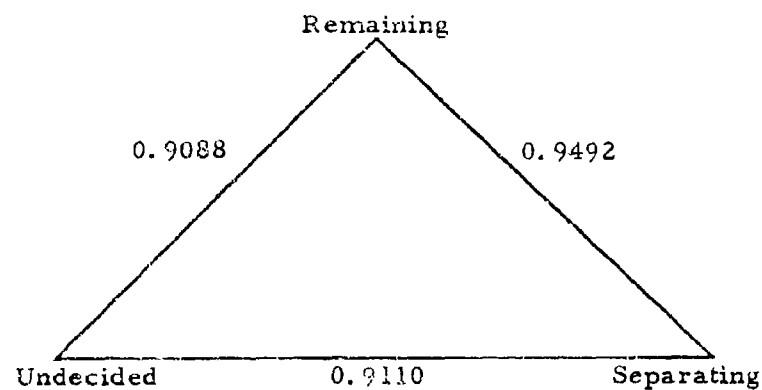


Figure 6b. Instrumental Values

Spearman Rho Correlations Between Pilots' Perceived
Organizational Values for Pilots Intending To
Remain on Active Duty, Undecided, and
Separating from Active Duty

duty; an r_s of 0.9110 with a T of 8.27 for the pilots undecided about their career intentions and the pilots planning to separate from active duty. The T critical value for all the above Spearman rho comparisons was 2.145. Therefore the null hypothesis was rejected in each case, and each set of rankings indicated a statistically significant dependency.

f. Pilots' Personal Values and Their Perceived Organizational Values by Career Intentions (see Figures 7a and 7b).

1. Terminal Values. The following r_s values and T test statistics were computed when comparing the pilots' personal values and their perceived organizational values: an r_s of 0.1490 with a T of 0.56 for the pilots intending to remain on active duty, an r_s of 0.0634 with a T of 0.24 for the pilots undecided about their career intentions, an r_s of -0.1449 with a T of -0.55 for the pilots planning to separate from active duty. The T critical value for all the above Spearman rho comparisons was 2.145. Therefore the null hypothesis could not be rejected in each case and the rankings were statistically independent.

2. Instrumental Values. The following r_s and T test statistics were computed when comparing the pilots' personal values and their perceived organizational values: an r_s of 0.1088 with a T of 0.41 for the pilots intending to remain on active duty, an r_s of 0.0471 with a T of 0.18 for the pilots undecided about their career intentions, an r_s of -0.2693 with a T of -1.05 for the pilots planning to separate from active duty. The T critical value for all the above Spearman rho

<u>Organization</u>		<u>Pilots</u>
Remaining Composite*	<u>0.1490</u>	Remaining on Active Duty
Undecided Composite	<u>0.0634</u>	Undecided
Separating Composite	<u>-0.1449</u>	Separating from Active Duty

Figure 7a. Terminal Values

<u>Organization</u>		<u>Pilots</u>
Remaining Composite	<u>0.1088</u>	Remaining on Active Duty
Undecided Composite	<u>0.0471</u>	Undecided
Separating Composite	<u>-0.2693</u>	Separating from Active Duty

Figure 7b. Instrumental Values

* Note: Composite includes all organizations.

Spearman Rho Correlations Between Pilots' Personal Values and Pilots' Perceived Organizational Values by Career Intentions

comparisons was 2.145. Therefore the null hypothesis could not be rejected in each case and the rankings were statistically independent.

KRUSKAL-WALLIS TEST

a. Pilots' Personal Terminal Values, by Career Intentions (see Table 16). A test statistic value of 0.1163 was computed. The null hypothesis that the three population distributions are equal was not rejected at the 0.05 level of significance since an χ^2 critical value of 5.99 was computed. Therefore, the three population distributions (pilots intending to remain on active duty, pilots undecided about their career intentions, and pilots planning to separate from active duty) are equal.

b. Pilots' Personal Instrumental Values, by Career Intentions (see Table 16). A test statistic value of 0.070 was computed. The null hypothesis that the three population distributions are equal was not rejected at the 0.05 level of significance since an χ^2 critical value of 5.99 was computed. Therefore, the three population distributions (pilots intending to remain on active duty, pilots undecided about their career intentions, and pilots planning to separate from active duty) are equal.

Table 16

Kruskal-Wallis Test

Pilots' Personal Terminal Values, by Career Intentions			
	Remaining on Active Duty	Undecided	Separating from Active Duty
Means:	28.2	27.8	26.5
Test Statistic = 0.1163			
$\chi^2_{\text{critical}} = 5.99$			
Fail to reject H_0			

Pilots' Personal Instrumental Values, by Career Intentions			
	Remaining on Active Duty	Undecided	Separating from Active Duty
Means:	27.7	28.1	26.7
Test Statistic = 0.070			
$\chi^2_{\text{critical}} = 5.99$			
Fail to reject H_0			

CHAPTER IV

DISCUSSION OF FINDINGS

This research was directed to four areas. The first area was to identify a common pilot personal value system. This area was further investigated by grouping pilots by commands and career intentions and testing whether a common personal value system exists for each group. The second area was to test for common perceived organizational value systems. This was accomplished by grouping pilots by command and career intentions. The third area researched the amount of agreement among the different personal value systems and among the different perceived organizational value systems. Finally the personal value systems were compared with the perceived organizational value systems to determine a possible influence on career intentions.

Composite rank ordering of medians was used to determine the different value systems. The Kendall coefficient, W , provided the test to measure the congruence within each value system. The Spearman rho test provided a means to measure the relationship between the different value systems. The Kruskal-Wallis test measured whether different groups were ranked similarly.

PILOT PERSONAL VALUE SYSTEMS

The Kendall W was 0.2976 for all pilots' personal terminal values and 0.3348 for all pilots' personal instrumental values. Both these W values supported the first research hypothesis that a common value system exists for all pilots.

The pilot personal value system ranked family security, freedom, and self-respect as the top three terminal values. These three values were heavily skewed to the right in the frequency distributions for the pilots' terminal values. Happiness, a sense of accomplishment, and national security were ranked next and their rankings were slightly skewed to the right. Six values were distinctly skewed to the left, indicating a lesser degree of importance to the pilots than the other values. These values were an exciting life, a comfortable life, equality, social recognition, pleasure, and a world of beauty. The other values were widely dispersed throughout the frequency distributions.

The pilots ranked honest, responsible, and capable as the top three instrumental values, and these values were heavily skewed to the right. Courageous, broadminded, and self-controlled were ranked next and their distributions were slightly skewed to the right. The values which were ranked near the bottom and skewed to the left included intellectual, forgiving, cheerful, polite, obedient, and clean. The remaining values were widely dispersed throughout the frequency

distributions.

The pilots were then grouped by command and by career intention. The different commands studied were SAC, MAC, TAC, and ATC. The pilots were also grouped on the basis of either intending to remain on active duty, undecided about their career intentions, or planning to separate from active duty. In each group the Kendall W's computed for both the terminal and instrumental personal value rankings supported the research hypothesis that a common personal value system does exist.

SAC pilots ranked freedom, family security, and self-respect as their top three terminal values; and honest, responsible, and capable as the top three instrumental values.

MAC pilots ranked family security, freedom, and self-respect as the top three terminal values; and honest, responsible and capable as the top three instrumental values.

TAC pilots ranked freedom, national security, and family security as the top three terminal values; and honest, capable, and responsible as the top three instrumental values.

ATC pilots ranked family security, self-respect, and freedom as the top three terminal values; and honest, responsible, and capable as the top three instrumental values.

The pilots planning to remain on active duty ranked family security, freedom, and self-respect as the top three terminal values;

and honest, responsible, and capable as the top three instrumental values.

The pilots undecided about their career intentions ranked family security, freedom, and self-respect as the top three terminal values; and honest, responsible, and capable as the top three instrumental values.

The pilots planning to separate from active duty ranked family security, freedom, and self-respect as tied for first place. The top three instrumental rankings were honest, responsible, and courageous.

PILOT PERCEIVED ORGANIZATIONAL VALUE SYSTEMS

The pilots were first grouped by command (SAC, MAC, TAC, and ATC) and then by career intentions. In each group the Kendall Ws computed for both the terminal and instrumental perceived organizational value rankings supported the second research hypothesis that a common perceived organizational value system does exist.

SAC pilots ranked national security, a world at peace, and a sense of accomplishment as the top three organizational terminal values; and obedient, capable, and ambitious as the top three organizational instrumental values.

MAC pilots ranked national security, a world at peace, and a sense of accomplishment as the top three organizational terminal

values; and ambitious, responsible, and obedient as the top three organizational instrumental values.

TAC pilots ranked national security, a world at peace, and a sense of accomplishment as the top three organizational terminal values; and ambitious, obedient, and responsible as the top three organizational instrumental values.

ATC pilots ranked national security and a sense of accomplishment as the top two organizational terminal values; a world at peace and social recognition were tied for third. The top three organizational instrumental values were obedient, capable, and ambitious.

The pilots planning to remain on active duty rated national security, a world at peace, and a sense of accomplishment as the top three organizational terminal values; and obedient, responsible, and capable as the top three organizational instrumental values.

The pilots undecided about their career intentions rated national security, a world at peace, and a sense of accomplishment as the top three organizational terminal values; and ambitious, obedient, and capable as the top three organizational instrumental values.

The pilots planning to separate from active duty rated national security, social recognition, and a world at peace as the top three organizational terminal values; and obedient, ambitious, and responsible as the top three organizational instrumental values.

PERSONAL VALUE SYSTEMS COMPARISONS

The personal value systems of SAC, MAC, TAC, and ATC pilots were compared with each other to determine the degree of correlation. The pilots intending to remain on active duty, the pilots undecided about their career intentions, and the pilots planning to separate from active duty were also compared to determine the degree of correlation between each group.

A Spearman rho correlation coefficient was computed for the following pairs in order to measure the degree of correlation: SAC with MAC, SAC with TAC, SAC with ATC, MAC with TAC, MAC with ATC, and TAC with ATC. Both terminal and instrumental rankings were compared for each paired group. The Spearman rho coefficients for the personal values ranged from a low of 0.7376 for the MAC and TAC comparison to a high of 0.9322 for the MAC and ATC comparison. The Spearman rho coefficients for the personal instrumental values ranged from a low of 0.8470 for the TAC and ATC comparison to a high of 0.9649 for the SAC and TAC comparison. Each Spearman rho coefficient was statistically significant. Further, each r_s exceeded the criterion test value and thus the researchers concluded in answer to research question one that there was a high degree of correlation between the pilots' personal value systems when compared by commands.

The pilots grouped by intending to remain on active duty, undecided about their career intentions, and planning to separate were tested for agreement of personal values by both a Kruskal-Wallis test and pair-wise Spearman rho comparisons. Both terminal and instrumental personal value systems were compared.

The Kruskal-Wallis test failed to reject the statistical hypothesis for both the personal instrumental and terminal values. This allowed the researchers to conclude that all pilots, regardless of their career intentions, have similar value systems.

This conclusion was further supported by the Spearman rho coefficients. The Spearman rho coefficients for the personal terminal values ranged from a low of 0.9533 for the comparison involving the pilots intending to remain on active duty with the pilots planning to separate from active duty to a high of 0.9917 for the comparison involving pilots intending to remain on active duty with the pilots undecided about their career intentions. The personal instrumental values comparisons ranged from a low of 0.8601 to a high of 0.9541. All Spearman rho coefficients were statistically significant. Further, each r_s exceeded the criterion test value and thus the researchers concluded in answer to research question one that there was a high degree of correlation between the pilots' personal value systems when compared by career intentions.

PILOTS' PERCEIVED ORGANIZATIONAL VALUE SYSTEMS COMPARISONS

The pilots' perceived organizational value systems of SAC, MAC, TAC, and ATC pilots were compared with each other to determine the degree of correlation. The pilots intending to remain on active duty, the pilots undecided about their career intentions, and the pilots planning to separate from active duty were also compared to determine the degree of correlation between each group.

A Spearman rho correlation coefficient was computed for the following pairs: SAC with MAC, SAC with TAC, SAC with ATC, MAC with TAC, MAC with ATC, and TAC with ATC. Both terminal and instrumental rankings were compared for each paired group. The Spearman rho coefficients for the personal perceived organizational terminal values ranged from a low of 0.8754 for the SAC and MAC comparison to a high of 0.9484 for the SAC and ATC comparison. The Spearman rho coefficients for the personal perceived organizational instrumental values ranged from a low of 0.8403 for the SAC and ATC comparison to a high of 0.9382 for the MAC and TAC comparison. Each Spearman rho coefficient was statistically significant. Further, each r_s exceeded the criterion test value and thus the researchers concluded in answer to research question two that there was a high degree of correlation between the pilots' perceived organizational value systems when compared by command.

A Spearman rho correlation coefficient was then computed comparing the pilots' perceived organizational values grouped by their career intentions. The Spearman rho coefficients for the personal perceived organizational terminal values ranged from a low of 0.8324 for the pilots intending to remain on active duty with the pilots planning to separate from active duty to a high of 0.9838 for the comparison involving the pilots intending to remain on active duty with the pilots undecided about their career intentions. The perceived organizational instrumental values comparisons ranged from a low of 0.9088 to a high of 0.9492. All Spearman rho coefficients were statistically significant. Further, each r_s exceeded the criterion test value and thus the researchers concluded in answer to research question two that there was a high degree of correlation between the pilots' perceived organizational value systems when compared by career intentions.

PERSONAL VALUE SYSTEMS AND PERCEIVED ORGANIZATIONAL VALUE SYSTEMS COMPARISONS

The pilots' personal value systems from each command (SAC, MAC, TAC, and ATC) were compared with their respective perceived organizational value systems. The Spearman rho correlation coefficient for the SAC pilots' values versus the perceived SAC organizational values was 0.3918 for the terminal values and 0.0176 for the instrumental values. The Spearman rho correlation coefficients for the MAC comparisons were 0.0648 for the terminal values and 0.0647

for the instrumental values. The Spearman rho correlation coefficients for the TAC comparisons were 0.4047 for the terminal values and -0.0531 for the instrumental values. The Spearman rho correlation coefficients for the ATC comparisons were 0.1954 for the terminal values and 0.1501 for the instrumental values. All Spearman rho coefficients were not statistically significant. Further each r_s was below the criterion test value. Therefore the researchers concluded in answer to research question three that the pilots' personal value systems were independent of their perceived organizational value systems.

The pilots' personal value systems were then compared with their perceived organizational value systems based on career intentions. The Spearman rho correlation coefficients for the pilots intending to remain on active duty were 0.1490 for the terminal values and 0.1088 for the instrumental values. The Spearman rho correlation coefficients for the pilots undecided about their career intentions were 0.0634 for the terminal values and 0.0471 for the instrumental values. The Spearman rho correlation coefficients for the pilots planning to separate from active duty were -0.1449 for the terminal values and -0.2693 for the instrumental values. All Spearman rho coefficients were not statistically significant. Further each r_s was below the criterion test value. Therefore the researchers concluded in answer to research question three that the pilots' personal value systems were independent of their perceived organizational value systems when compared by career intentions.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The researchers found that a common value system existed among the pilots in Class 78B at SOS (see Tables 1 and 2). The researchers also found that a common perceived organizational value system existed among the pilots who were assigned to a particular command in Class 78B at SOS (see Tables 5 and 6). Further, the researchers found that a slight variability exists in the ranking of values in both the pilots' common value system and in the pilots' perception of their assigned command's value system. The finding of a common value system and a common perceived organizational value system enabled the researchers to establish a composite value structure so as to examine values in relation to career intention. Therefore, the remainder of this chapter will focus on values in relation to career intentions.

CONCLUSIONS

Kendall values of $W = 0.2976$ for terminal values and $W = 0.3348$ for instrumental values showed that a common value system existed among the pilots in Class 78B at SOS. This finding allowed the

researchers to identify a common value system for pilots who identified with a particular career intention such as intending to remain on active duty, undecided about career intentions, or planning to separate from active duty. Table 14 shows the Kendall W for pilots' personal values grouped by career intention and Table 7 shows the personal terminal value medians and composite rank order for pilots intending to remain on active duty, undecided, and separating from active duty. Further, Table 8 shows personal instrumental value medians and composite rank orders for pilots intending to remain on active duty, undecided and separating from active duty. The identification of a common value system among pilots supports the contention that personalities within certain occupations and careers have unique value and value system characteristics (23:21). Further, the identification of a common value system can provide management with the insight to critically evaluate its personnel policies. For example, Table 1 provides us with a ranking of personal terminal values and Table 2 provides us with a ranking of personal instrumental values. The top three terminal values are family security, freedom, and self-respect. The top three instrumental values are honest, responsible, and capable. These are the values which are the driving force of the pilots of SOS Class 78B. If established personnel policies conflict with these values then value conflicts will occur. If managers recognize and begin to understand and respect employees as individuals with values that differ

from their own, management can not only improve traditional turnover statistics but set goals for retention (5:59).

The researchers were also able to identify a common perceived organizational value system for pilots grouped by career intentions as shown in Table 15. The comparison (see Figures 7a and 7b) of the pilots' personal values with their perceived organizational values revealed two important findings. The pilots' personal values were not correlated with their perceived organizational values for any one of the three groups. This was true for both terminal and instrumental values. In addition, the Spearman rho coefficients identified a weak but noticeable downward trend. The pilots intending to remain on active duty had a slightly positive Spearman rho correlation coefficient. The pilots undecided about their career intentions had a lower, but still positive Spearman rho correlation coefficient. The pilots planning to separate from active duty had a negative Spearman rho correlation coefficient. This downward trend was noticeable for both terminal and instrumental values.

Tables 17, 18, and 19 provide an indication of the differences between the pilots' personal values and their perceived organizational values. For example, the pilots remaining on active duty ranked the terminal personal values of family security first, happiness tied for fourth, equality thirteenth, and social recognition fourteenth. Yet the perceived organizational terminal value rankings for pilots remaining

Table 17
Value Systems for Pilots Intending To Remain on Active Duty

Rank	Perceived		Perceived	
	Personal Terminal	Organizational Terminal	Personal Instrumental	Organizational Instrumental
1	Family Security	1. National Security	1. Honest	1. Obedient
2	Freedom	2. World at Peace	2. Responsible	2. Responsible
3	Self-respect	3. Sense of Accomplishment	3. Capable	3. Capable
4.5	Happiness	4. Equality	4. Courageous	4. Ambitious
4.5	National Security	5. Social Recognition	5. Logical	5. Self-controlled
6	Sense of Accomplishment	6. Self-respect	6. Broadminded	6. Logical
7.5	Inner Harmony	7. Freedom	7. Self-controlled	7. Polite
7.5	Wisdom	8. Exciting Life	8. Ambitious	8. Helpful
9	World at Peace	9. Family Security	9. Independent	9. Intellectual
10.5	Exciting Life	10. Comfortable Life	10. Imaginative	10. Intellectual
10.5	True Friendship	11. True Friendship	11. Helpful	11. Broadminded
12	Comfortable Life	12. Wisdom	12. Intellectual	12. Honest
13	Equality	13. Inner Harmony	13. Forgiving	13. Courageous
14	Social Recognition	14. Happiness	14. Obedient	14. Independent
15	Pleasure	15. Pleasure	15. Polite	15. Imaginative
16	World of Beauty	16. World of Beauty	16. Clean	16. Forgiving

Table 18

Value Systems for Pilots Undecided About Their Career Intentions

Rank	Personal Terminal	Perceived Organizational Terminal	Personal Instrumental	Perceived Organizational Instrumental
1	Family Security	1. National Security	1. Honest	1. Ambitious
2	Freedom	2. World at Peace	2. Responsible	2. Obedient
3	Self-respect	3. Sense of Accomplishment	3. Capable	3. Capable
4	Happiness	4. Social Recognition	4.5 Self-controlled	4. Responsible
5	National Security	5. Equality	4.5 Courageous	5. Self-controlled
6	Sense of Accomplishment	6. Freedom	6. Broadminded	6. Clean
7	Inner Harmony	7. Exciting Life	7. Independent	7. Logical
8	World at Peace	8. Self-respect	8. Logical	8. Helpful
9	Wisdom	9. Comfortable Life	9. Ambitious	9. Intellectual
10	True Friendship	10. Family Security	10. Helpful	10. Polite
11	Exciting Life	11.5 True Friendship	11. Imaginative	11. Honest
12	Comfortable Life	11.5 Wisdom	12. Intellectual	12. Independent
13	Equality	13.5 Happiness	13. Forgiving	13. Courageous
14.5	Pleasure	13.5 Inner Harmony	14. Polite	14. Imaginative
14.5	Social Recognition	15. Pleasure	15. Obedient	15. Broadminded
16	World of Beauty	16. World of Beauty	16. Clean	16. Forgiving

Table 19
Value Systems for Pilots Planning To Separate from Active Duty

Rank	Personal Terminal	Perceived Organizational Terminal	Personal Instrumental	Perceived Organizational Instrumental
2	Freedom	1. National Security	1. Honesty	1. Obedient
2	Family Security	2. Social Recognition	2. Responsible	2. Ambitious
2	Self-respect	3. World at Peace	3. Courageous	3. Responsible
4	Happiness	4. Sense of Accomplishment	4. Independent	4. Capable
5	Inner Harmony	5. Exciting Life	5. Broadminded	5. Self-controlled
5.5	Sense of Accomplishment	6. Equality	6. Capable	6. Logical
6.5	National Security	7. Comfortable Life	7. Logical	7. Polite
8	Wisdom	8. Self-respect	8. Self-controlled	8. Clean
9	True Friendship	9. Family Security	9. Imaginative	9. Helpful
10	An Exciting Life	10. Pleasure	10. Helpful	10. Honest
11	World at Peace	11. Happiness	11. Intellectual	11. Broadminded
12	Comfortable Life	12. Freedom	12. Forgiving	12. Intellectual
13	Social Recognition	13. Inner Harmony	13. Ambitious	13. Independent
14.5	Equality	14. True Friendship	14. Polite	14. Forgiving
14.5	Pleasure	15. Wisdom	15. Clean	15. Courageous
16	World of Beauty	16. World of Beauty	16. Obedient	16. Imaginative

on active duty were family security ninth, happiness fourteenth, equality fourth, and social recognition fifth. Further, wide differences also occurred in the personal instrumental and perceived organizational instrumental value rankings. The personal instrumental rankings were honest first, courageous fourth, obedient fourteenth, and polite fifteenth; but the perceived organizational instrumental rankings were honest twelfth, courageous thirteenth, obedient first, and polite seventh.

Similar wide value differences were evident for the pilots undecided about their career intentions. The terminal values which had the largest differences between the pilots' personal value rankings and their perceived organizational value rankings were family security, happiness, equality, and social recognition. The instrumental values with the widest differences were honest, courageous, broadminded, ambitious, obedient, and clean.

Likewise, wide differences were noted between the personal value rankings and perceived organizational value rankings for pilots planning to separate from active duty. The terminal values with the largest differences were freedom, inner harmony, a world at peace, social recognition, and equality. The instrumental values with the largest differences were honest, courageous, independent, ambitious, and polite.

When all three groups of pilots are evaluated it is evident that these pilots view the organizational values differently from their own personal values. The differences in the pilots' personal values and their perceived organizational values thus indicate areas for possible significant conflicts in the present Air Force personnel policies.

The downward trend of the Spearman rho correlation coefficients for pilots intending to remain on active duty, undecided about their career intentions, and planning to separate, based on a comparison of personal and perceived organizational values, was caused by the variability in the pilots' personal and perceived organizational value systems. Tables 17, 18, and 19 were used to identify particular value differences which caused the pilots planning to separate from active duty to have a lower Spearman rho correlation coefficient than the pilots intending to remain on active duty or the pilots undecided about their career intentions.

The terminal values with the largest degree of difference were freedom, pleasure, true friendship, and wisdom. Freedom was ranked high by all groups in their personal value systems. However, the pilots planning to separate ranked freedom twelfth in their perceived organizational value system, whereas the pilots who were undecided or intend to remain on active duty ranked freedom sixth and seventh respectively in their perceived organizational value systems.

Pleasure was ranked low on all the pilots' personal value systems. However, the pilots planning to separate from active duty ranked pleasure tenth in their perceived organizational value system, whereas the pilots who were undecided or intend to remain on active duty both ranked pleasure fifteenth in their perceived organizational value systems.

True friendship was also ranked similarly by all groups within their personal value systems. The pilots planning to separate from active duty ranked true friendship fourteenth in their perceived organizational value system, whereas the pilots who were undecided or intend to remain on active duty ranked true friendship tied for eleventh and eleventh respectively in their perceived organizational value systems.

Wisdom was similarly ranked by all groups within their personal value systems. The pilots planning to separate ranked wisdom fifteenth in their perceived organizational value system, whereas the pilots who were undecided or intend to remain on active duty both ranked wisdom twelfth in their perceived organizational value systems.

These four terminal values, freedom, pleasure, true friendship, and wisdom were all ranked similarly among the pilot personal value systems. However, the pilots planning to separate from active duty perceived these four values differently when ranking

the perceived organizational values than did those pilots intending to remain on active duty or undecided about their career intentions. The pilots planning to separate from active duty ranked the perceived organizational values freedom, pleasure, and true friendship lower than either the pilots intending to remain on active duty or the pilots undecided about their career intentions. The perceived organizational value pleasure was ranked higher by the pilots planning to separate from active duty than either the pilots intending to remain on active duty or the pilots undecided about their career intentions. Therefore, the Air Force could direct its efforts towards these perceived terminal organizational value differences in an attempt to eliminate the value differences between the pilots planning to separate from active duty and those pilots intending to remain on active duty or undecided about their career intentions.

The instrumental values with the largest degree of differences were ambitious, independent, and imaginative. Ambitious was ranked eighth in the personal value system of pilots intending to remain on active duty and ranked ninth in the personal value system of pilots undecided about their career intentions. However, ambitious was ranked thirteenth in the personal value system of the pilots planning to separate from active duty. Ambitious was ranked high by all groups in their perceived organizational value systems. The researchers thus hypothesized that the low personal value ranking of

ambitious may relate negatively to the up-or-out promotion policies used by the Air Force. The researchers' past flying experience supported this hypothesis in that many pilots were content and wanted to remain in an operational flying unit. However, the Air Force's up-or-out promotion system relies on competition within the officer force structure, and requires a broad background of skills to enhance the probability of being promoted (26:1; 27:1). The use of competition and the need to acquire a broad experience background conflicts with the low personal value ranking of ambitious. The Air Force may thus be losing qualified pilots due to the up-or-out promotion policies. The use of contract officers to fill some pilot manning positions should be investigated as one method to ameliorate this apparent value conflict for those pilots whose career interests do not extend beyond their flying duties.

Independent was ranked ninth in the personal value system of pilots intending to remain on active duty and ranked seventh in the personal value system of pilots undecided about their career intentions. However, independent was ranked fourth in the personal value system of those pilots planning to separate from active duty. Independent was ranked similarly among all groups in their perceived organizational value systems. As previously noted, the pilots planning to separate from active duty ranked freedom lower in their perceived organizational value systems than either the pilots intending

to remain on active duty or the pilots undecided about their career intentions. Thus, the pilots planning to separate from active duty perceive less freedom in their organizations and yet desire more independence than do their more satisfied colleagues. This value conflict might well contribute significantly to their dissatisfaction with an Air Force career and their consequent decision to separate from active duty.

Imaginative was ranked slightly higher in the personal value systems of the pilots planning to separate from active duty than in the personal value systems of either the pilots intending to remain on active duty or those undecided about their career intentions. Imaginative was also ranked lower in the perceived organizational value system of the pilots planning to separate from active duty than in the perceived organizational value systems of the pilots intending to remain on active duty or the pilots undecided about their career intentions.

The differences in the value rankings of independent and imaginative for pilots planning to separate from active duty may be indicative of a hidden problem within flight operations. The Air Force regulations concerning flight operations are quite precise and the pilot has minimum control over the mission, thus leaving little room for independent and imaginative actions. The possibility of giving the pilot more authority to control the mission may help in diminishing

the personal and perceived organizational value differences for those pilots planning to separate from active duty. This suggestion is consistent with current research in the field of job enrichment in that the motivating potential of any job is related to responsibility (6:59). By gaining authority and hence responsibility, the pilots planning to separate from active duty would be able to better exhibit independent and imaginative behavior.

SUMMARY OF CONCLUSIONS

The foregoing discussion suggests that to improve the pilot retention rate, the Air Force should address the value conflicts that distinguish the pilots planning to separate from active duty from their colleagues. The pilots planning to separate from active duty place a higher emphasis on the personal values independent and imaginative. These pilots also perceive that their organizations place a lower emphasis on wisdom, freedom, and imagination. It appears, then, that these pilots desire more job related responsibility and autonomy. In contrast to the pilots' desires, the Air Force provides a standardized routine based on regulations, rigid schedules, additional duties unrelated to flying activities, and an unwritten rule that an individual's ideas are not appreciated unless the ideas conform with the present organizational attitudes. In addition, the pilots planning to separate from active duty placed a lower emphasis on the personal

value ambition, and perceived that their organizations placed a lower emphasis on true friendship than did their colleagues. Most officers are ambitious in the pursuit of their flying careers. But having attained the status of pilot, some pilots are content to remain in a rated flying position. In contrast, the Air Force wants ambitious, aggressive, and rank-conscious pilots. The Air Force forces these desires on all pilots through a competitive OER system. Further, an aggressive, rank-conscious individual must be first concerned with his career development. Consequently, true friendship among fellow pilots is complicated by the divisive pressures inherent in personal OER competition. Rather than conform to these organizational values, these pilots prefer to separate from active duty.

Value conflicts do exist within the Air Force flying organizations. If the Air Force is concerned and wants to retain its pilots, then positive action should be taken to lessen these value conflicts. Ignoring these value conflicts will only contribute to a continuing loss of pilots.

RECOMMENDATIONS

This research represented a contribution to the understanding of the retention problem of pilots which exists in the Air Force today. Because individual value systems direct an individual's behavior, there are considerable advantages to be gained from an

awareness of value systems. Because of the importance of human values the researchers recommend the following:

1. That personnel policies place an increased emphasis on individual value systems prior to making decisions which are concerned with staffing, training, and career development; and
2. That the Air Force consider surveying a larger sample of the pilots in MAC to supplement these research findings in which 24% of the MAC pilots surveyed were planning to separate from active duty.

APPENDIX A
AIR FORCE OFFICER VALUE SURVEY

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AU)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433



REPLY TO
ATTN OF: LSGR (LSSR 29-78B/Capt Doucet/Capt Dethloff/AUTOVON
785-6513)

SUBJECT: Air Force Officer Value Survey

11 MAY 1978

TO:

1. The attached questionnaire was prepared by a research team at the Air Force Institute of Technology, Wright-Patterson AFB, Ohio. The purpose of this survey is to study the value systems of Air Force officers. Each individual has a particular value system which provides a basis for individual likes, interests, attitudes, and beliefs. Values also provide a basis for individual rationalization and decision making. Therefore, by understanding the values of Air Force officers, the Air Force can have a better basis for making personnel decisions.

2. Headquarters USAF Survey Control Number 78-111 has been assigned to this questionnaire. Your participation in this research is voluntary. This survey is anonymous, and all questionnaires will be destroyed upon completion of the research effort.

3. It should take from 20 to 40 minutes to complete this survey. When you have finished, please insert the questionnaire material into the envelope and return the envelope to the SOS/EDVA survey monitor. Your cooperation in providing this data is greatly appreciated.

HENRY W. PARLETT, Colonel, USAF
Associate Dean for Graduate
Education
School of Systems and Logistics

- 4 Atch
1. Privacy Act Statement
 2. Instructions for Completing the Survey
 3. Questionnaire (3 parts)
 4. Return Envelope

Strength Through Knowledge

PRIVACY STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

- (1) 5 U.S.C. 301, Departmental Regulations; and/or
- (2) 10 U.S.C. 8012, Secretary of the Air Force, Powers, Duties, Delegation by Compensation; and/or
- (3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel; and/or
- (4) AFR 30-23, 22 Sep 76, Air Force Personnel Survey Program.

b. Principal Purposes. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine Uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on the data provided, will be included in written master's theses and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

AIR FORCE OFFICER VALUE SURVEY

GENERAL INSTRUCTIONS

Please read first

Attached is a questionnaire with three parts. Complete each part in order in the following manner:

1. Please complete the demographic questions (Part I) by circling the letter corresponding to the appropriate response.
2. Next, complete the personal value survey (Part II) according to the instructions on the first page of Part II.
3. Then complete the organizational value survey (Part III) according to the instructions on the first page of Part III.
4. Place the completed questionnaire material in the pre-addressed return envelope. The envelope should be returned to the SOS/EDVA Survey Monitor.

Thank you for your cooperation.

USAF SCN 78-111 (Expires 31 August 1978)

PART I

DEMOGRAPHIC QUESTIONS

Indicate your response by circling the appropriate answer.

1. What is your present age?
 - a. 23 or less
 - b. 24-25
 - c. 26-27
 - d. 28 or over
2. What is your total active Air Force commissioned service time?
 - a. less than 3 years
 - b. 3 but less than 5 years
 - c. 5 but less than 7 years
 - d. 7 but less than 9 years
 - e. 9 or more years
3. Prior to Squadron Officers School, which Major Command were you assigned to?
 - a. Strategic Air Command
 - b. Tactical Air Command
 - c. Military Airlift Command
 - d. Aerospace Defense Command
 - e. Air Training Command
 - f. United States Air Forces in Europe
 - g. Pacific Air Forces
 - h. Alaskan Air Command
 - i. Other
4. Prior to Squadron Officers School, how many total years were you assigned to the Major Command identified in question three?
 - a. less than 2 years
 - b. 2 but less than 4 years
 - c. 4 but less than 6 years
 - d. 6 but less than 8 years
 - e. 8 or more years

5. What is your current crew qualification?
- a. copilot
 - b. first pilot
 - c. aircraft commander
 - d. instructor aircraft commander
 - e. flight examiner aircraft commander
6. As of today, what are your plans for your Air Force career upon completion of your current assignment or your current active duty commitment?
- a. Definitely will separate from active duty
 - b. Fairly certain that I will separate from active duty
 - c. Leaning toward separating from active duty
 - d. Neutral on whether to remain on active duty or to separate
 - e. Leaning toward remaining on active duty
 - f. Fairly certain that I will remain on active duty
 - g. Definitely will remain on active duty
7. What is your current military status? Choose the most appropriate response.
- a. Regular Officer with an established date of separation (DOS)
 - b. Regular Officer
 - c. Career Reserve Officer beyond initial active duty commitment with an established DOS
 - d. Career Reserve Officer beyond initial active duty commitment
 - e. Career Reserve Officer on initial active duty commitment
 - f. Reserve Officer on initial active duty commitment with an established DOS
 - g. Other
8. Please specify the last assigned type and series aircraft you flew prior to attending SOS. For example; B-52H, F-4E, etc.
-

NOW TURN TO PART II

PART II

PERSONAL VALUE SURVEY

INSTRUCTIONS

On the next page are 18 values listed in alphabetical order. Your task is to arrange them in order of their importance to YOU, as guiding principles in YOUR life. Each value is printed on a gummed label which can be easily peeled off and pasted in the boxes on the left-hand side of the page.

Study the list carefully and pick out the one value which is the most important for you. Peel it off and paste it in Box 1 on the left.

Then pick out the value which is second most important for you. Peel it off and paste it in Box 2. Then do the same for each of the remaining values. The value which is least important goes in Box 18.

Work slowly and think carefully. If you change your mind, feel free to change your answers. The labels peel off easily and can be moved from place to place. The end result should truly show how you really feel.

© 1967 by Milton Rokeach

Halgren Tests
873 Persimmon Ave.
Sunnyvale, California 94087

- 1 _____ AMBITIOUS
(hard-working, aspiring)
- 2 _____ BROADMINDED
(open-minded)
- 3 _____ CAPABLE
(competent, effective)
- 4 _____ CHEERFUL
(lighthearted, joyful)
- 5 _____ CLEAN
(neat, tidy)
- 6 _____ COURAGEOUS
(standing up for your beliefs)
- 7 _____ FORGIVING
(willing to pardon others)
- 8 _____ HELPFUL
(working for the welfare
of others)
- 9 _____ HONEST
(sincere, truthful)
- 10 _____ IMAGINATIVE
(daring, creative)
- 11 _____ INDEPENDENT
(self-reliant, self-sufficient)
- 12 _____ INTELLECTUAL
(intelligent, reflective)
- 13 _____ LOGICAL
(consistent, rational)
- 14 _____ LOVING
(affectionate, tender)
- 15 _____ OBEDIENT
(dutiful, respectful)
- 16 _____ POLITE
(courteous, well-mannered)
- 17 _____ RESPONSIBLE
(dependable, reliable)
- 18 _____ SELF-CONTROLLED
(restrained, self-disci-
plined)

- 1 _____ A COMFORTABLE LIFE
(a prosperous life)
- 2 _____ AN EXCITING LIFE
(a stimulating, active life)
- 3 _____ A SENSE OF ACCOMPLISHMENT
(lasting contribution)
- 4 _____ A WORLD AT PEACE
(free of war and conflict)
- 5 _____ A WORLD OF BEAUTY
(beauty of nature and the arts)
- 6 _____ EQUALITY
(brotherhood, equal opportunity for all)
- 7 _____ FAMILY SECURITY
(taking care of loved ones)
- 8 _____ FREEDOM
(independence, free choice)
- 9 _____ HAPPINESS
(contentedness)
- 10 _____ INNER HARMONY
(freedom from inner conflict)
- 11 _____ MATURE LOVE
(sexual and spiritual intimacy)
- 12 _____ NATIONAL SECURITY
(protection from attack)
- 13 _____ PLEASURE
(an enjoyable, leisurely life)
- 14 _____ SALVATION
(saved, eternal life)
- 15 _____ SELF-RESPECT
(self-esteem)
- 16 _____ SOCIAL RECOGNITION
(respect, admiration)
- 17 _____ TRUE FRIENDSHIP
(close companionship)
- 18 _____ WISDOM
(a mature understanding of life)

When you have finished, go to the next page.

PART III

ORGANIZATIONAL VALUE SURVEY

INSTRUCTIONS

This value survey should be completed after you have finished the survey on your own personal values.

All organizations exhibit some values which provide principles for acceptable organizational procedures and behavior. The purpose of this survey is for you to rank order the organizational values of the major command you were assigned to prior to attending SOS. Use your own individual viewpoint to rank order these organizational values in the order you think these values are considered important within your last assigned major command.

Study the list and pick the one value which YOU THINK is the most important organizational value in your last assigned Major Air Command PRIOR to attending SOS. Peel it off and paste it in box one on the left.

Then continue with the same procedure for the remainder of the list. The organizational value that YOU THINK is the least important organizational value of the major command should be on the bottom of the list.

Work slowly and think carefully. If you change your mind, feel free to change your answers. The end result should indicate your view of the organizational values of the major command you were last assigned to prior to SOS.

C 1967 by Milton Rokeach

Halgren Tests
873 Persimmon Ave.
Sunnyvale, California 94087

- 1 _____ A COMFORTABLE LIFE
(a prosperous life)
- 2 _____ AN EXCITING LIFE
(a stimulating, active life)
- 3 _____ A SENSE OF ACCOMPLISHMENT
(lasting contribution)
- 4 _____ A WORLD AT PEACE
(free of war and conflict)
- 5 _____ A WORLD OF BEAUTY
(beauty of nature and the arts)
- 6 _____ EQUALITY
(brotherhood, equal opportunity for all)
- 7 _____ FAMILY SECURITY
(taking care of loved ones)
- 8 _____ FREEDOM
(independence, free choice)
- 9 _____ HAPPINESS
(contentedness)
- 10 _____ INNER HARMONY
(freedom from inner conflict)
- 11 _____ NATIONAL SECURITY
(protection from attack)
- 12 _____ PLEASURE
(an enjoyable, leisurely life)
- 13 _____ SELF-RESPECT
(self-esteem)
- 14 _____ SOCIAL RECOGNITION
(respect, admiration)
- 15 _____ TRUE FRIENDSHIP
(close companionship)
- 16 _____ WISDOM
(a mature understanding of life)

When you have finished, go to the next page.

- 1 _____ AMBITIOUS
(hard-working, aspiring)
- 2 _____ BROADMINDED
(open-minded)
- 3 _____ CAPABLE
(competent, effective)
- 4 _____ CLEAN
(neat, tidy)
- 5 _____ COURAGEOUS
(standing up for your beliefs)
- 6 _____ FORGIVING
(willing to pardon others)
- 7 _____ HELPFUL
(working for the welfare
of others)
- 8 _____ HONEST
(sincere, truthful)
- 9 _____ IMAGINATIVE
(daring, creative)
- 10 _____ INDEPENDENT
(self-reliant, self-sufficient)
- 11 _____ INTELLECTUAL
(intelligent, reflective)
- 12 _____ LOGICAL
(consistent, rational)
- 13 _____ OBEDIENT
(dutiful, respectful)
- 14 _____ POLITE
(courteous, well mannered)
- 15 _____ RESPONSIBLE
(dependable, reliable)
- 16 _____ SELF-CONTROLLED
(restrained, self-disci-
plined)

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